Amarican fabrics



Spring 1951

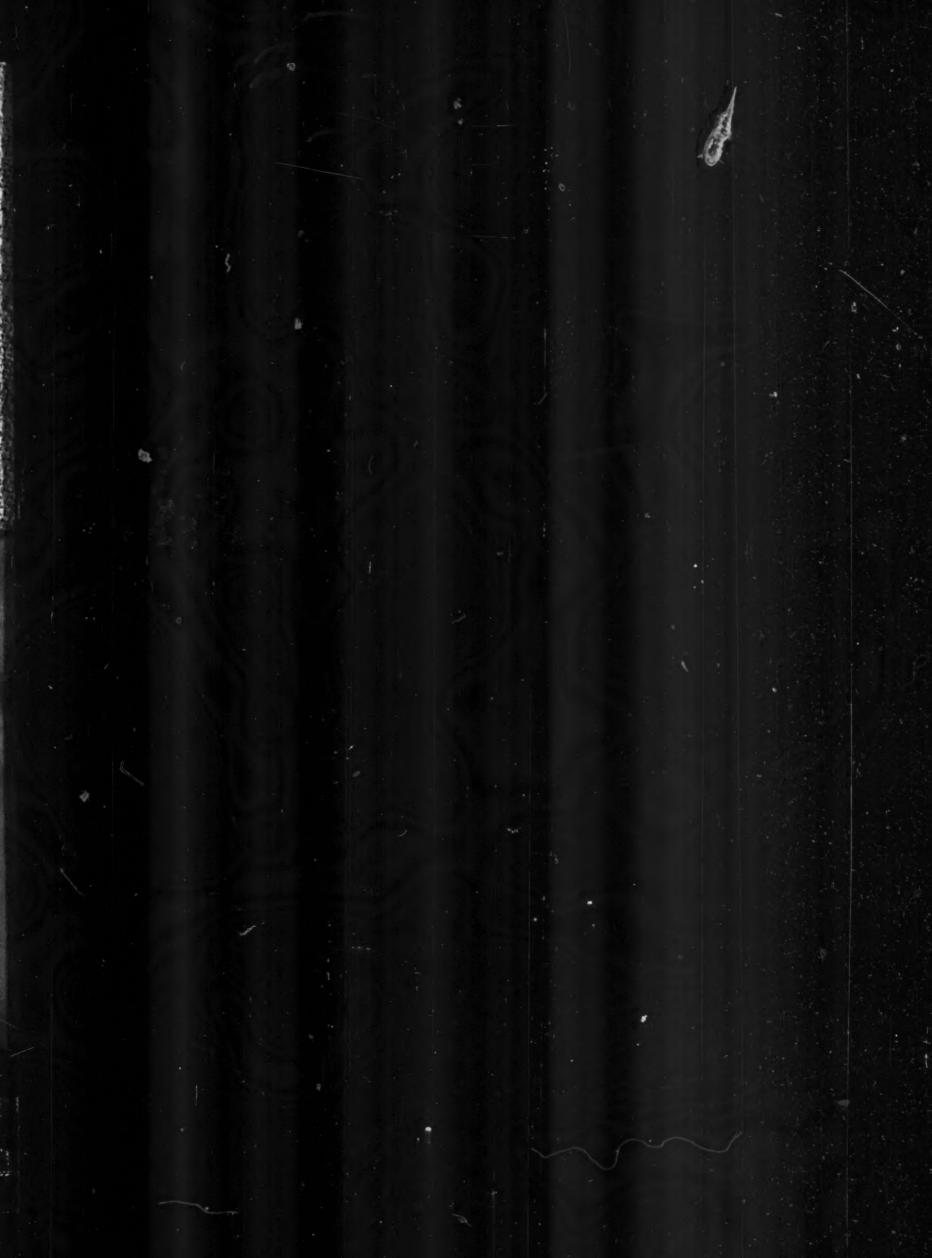


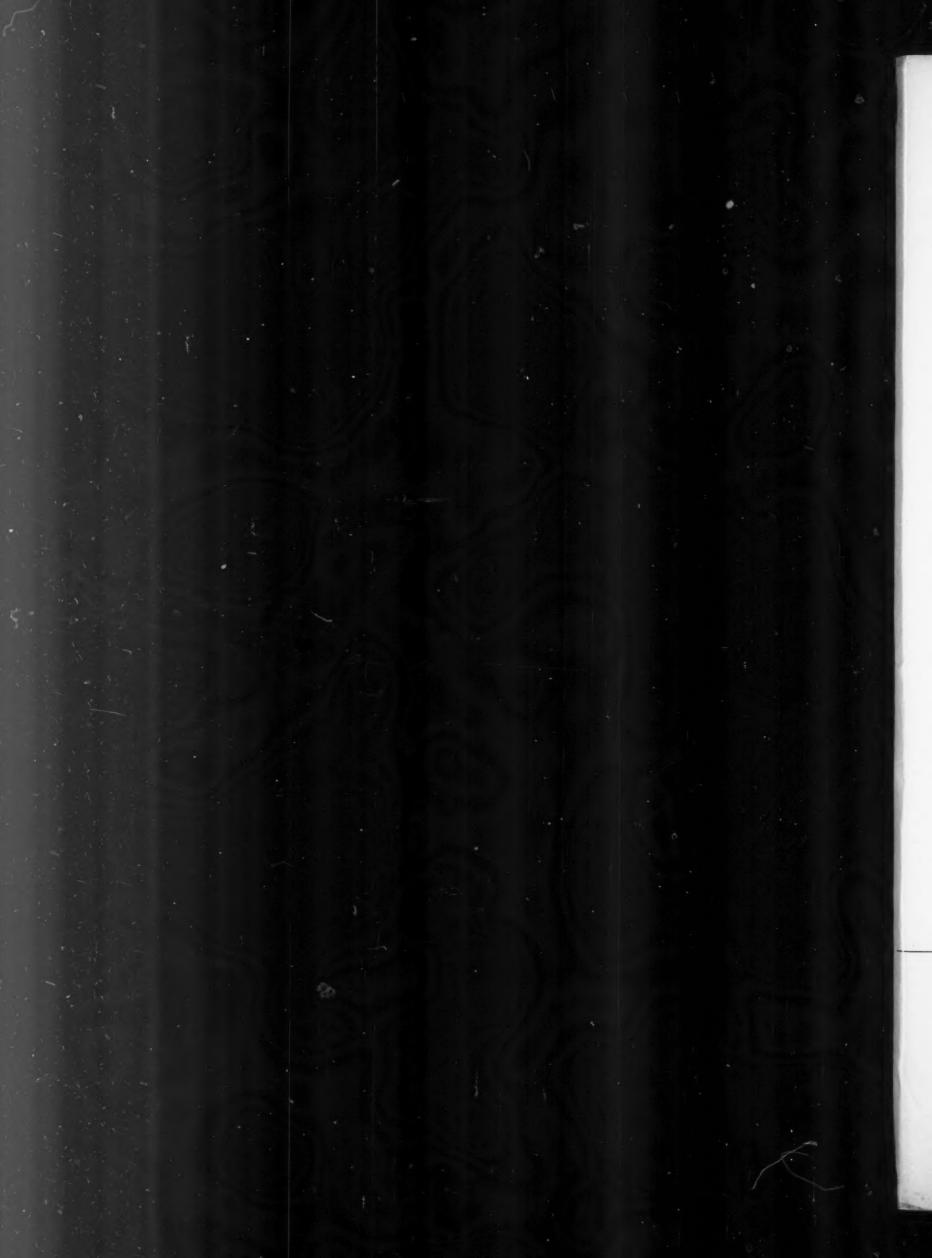
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that the American textile industry casts a major influence on the economic and social aspects of the world in which we live . . . that American textiledom has deservedly attained the world's pinnacle from which it can never be dislodged. To all who work within or with the industry this volume number seventeen of American Fabrics . . . presenting a special Portfolio of Paisleys, the second of a series of specific answers to Creative Starvation . . . is offered as a measure of help, of service . . . and, we hope, of inspiration.

American Fabrics is published quarterly by Reporter Publications, Incorporated, who are the publishers of Men's Reporter News Weekly, Neckwear Reporter, Canadian Reporter, Canadian Women's Reporter, National Gold Book Directory, and the British Gold Book.

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Number 17



Spring 1951

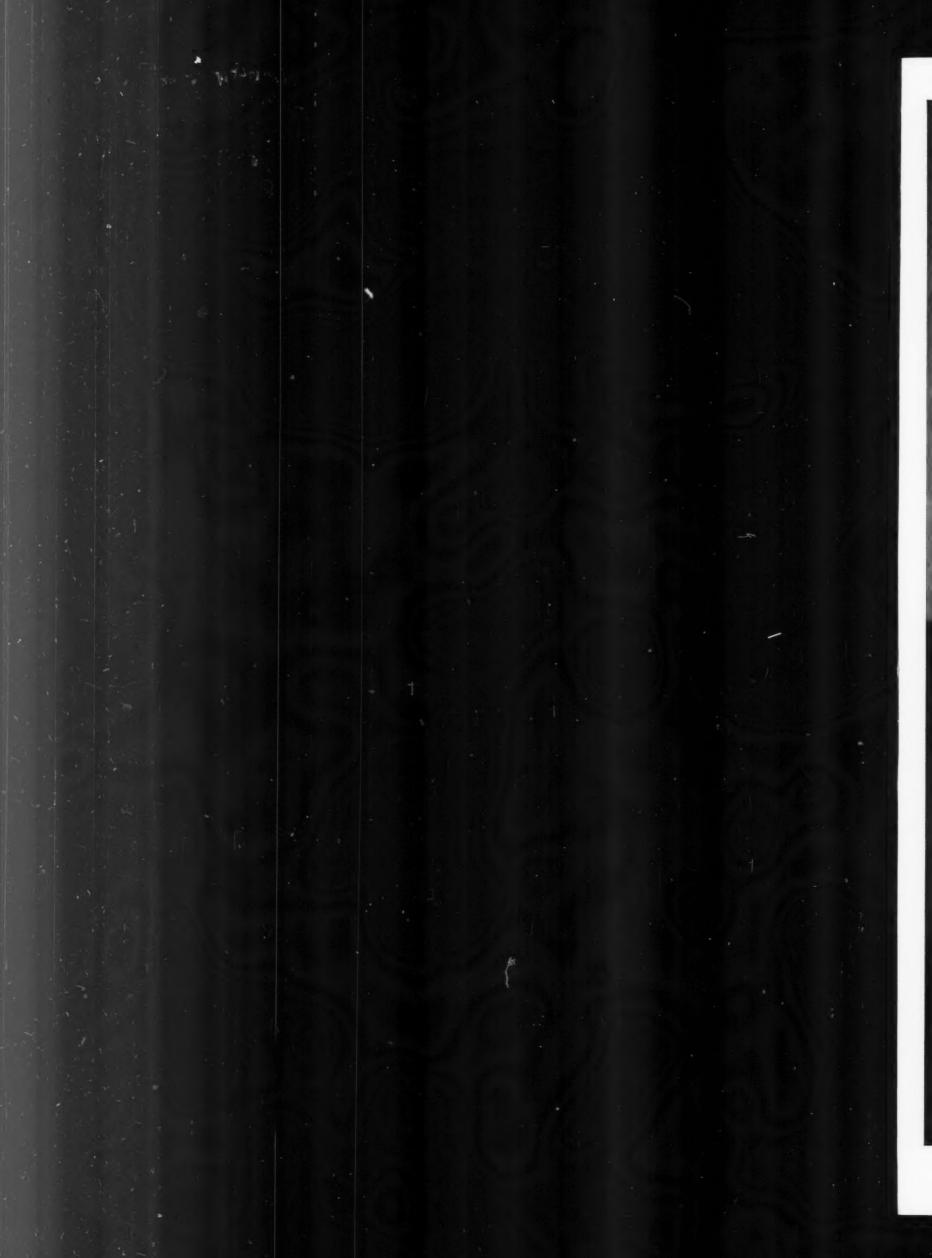
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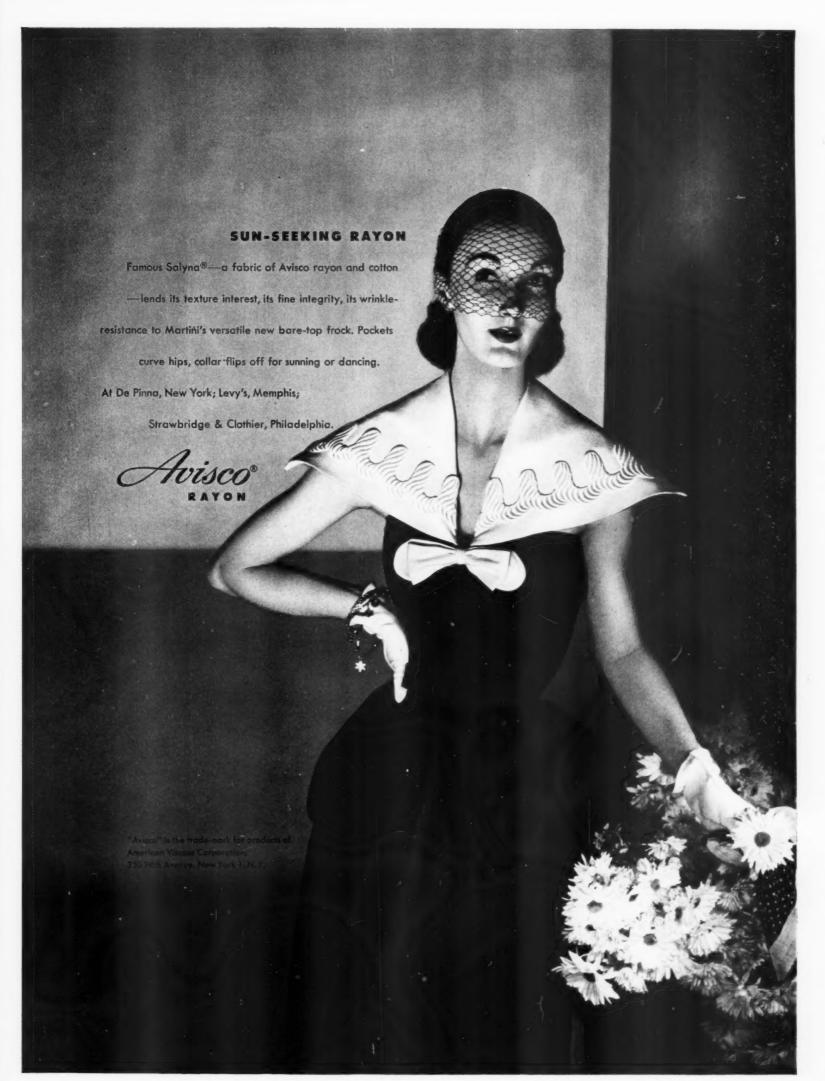
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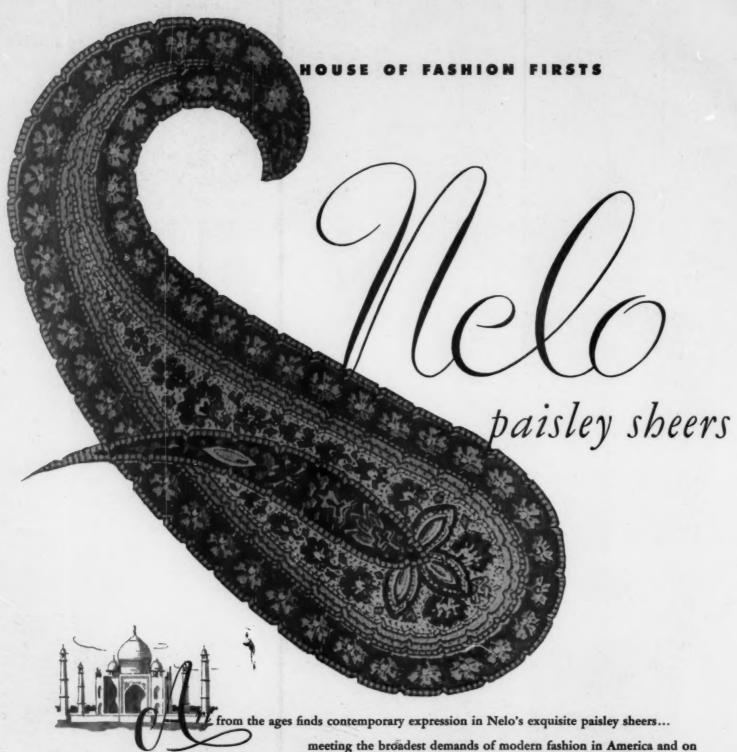
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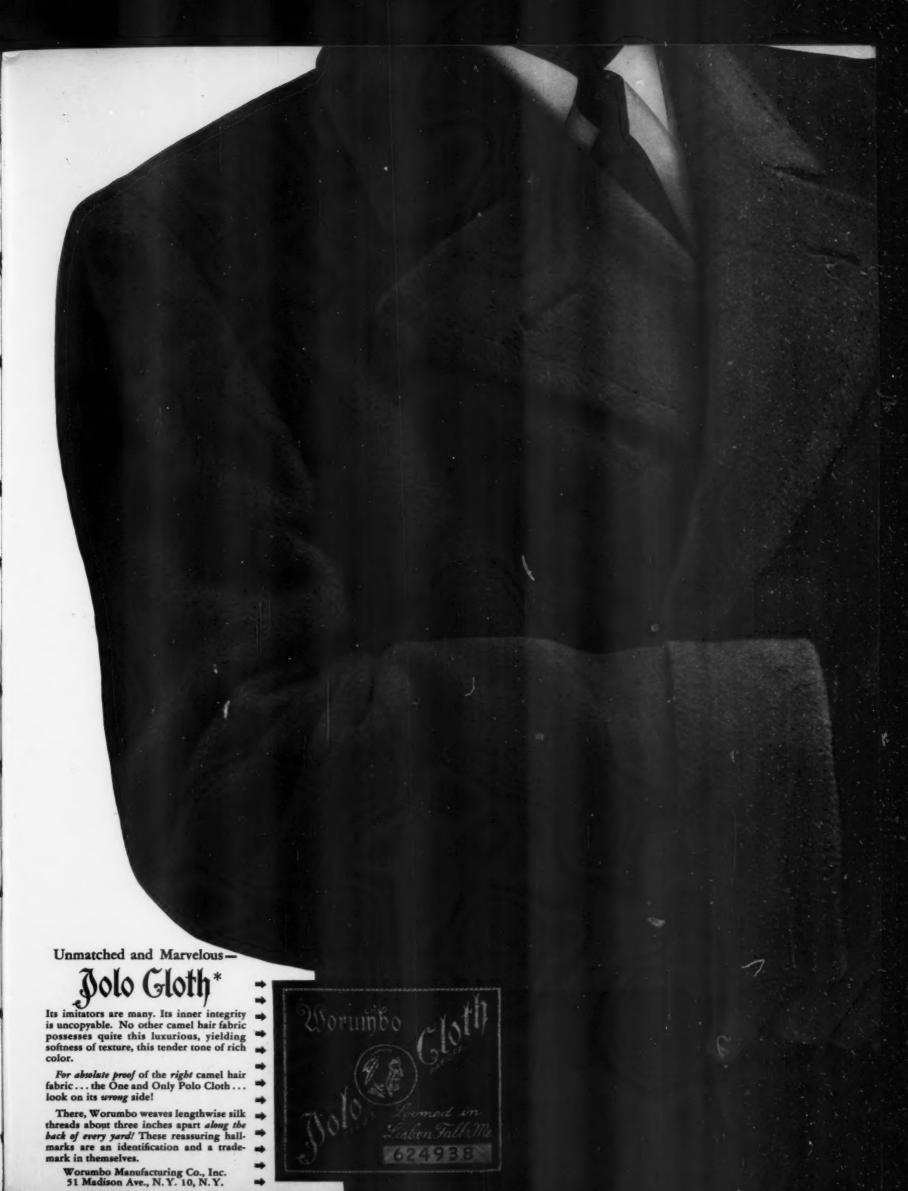


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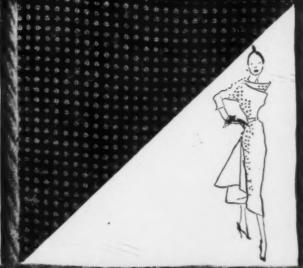


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individually finished in accordance with their
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WOOL at its best —

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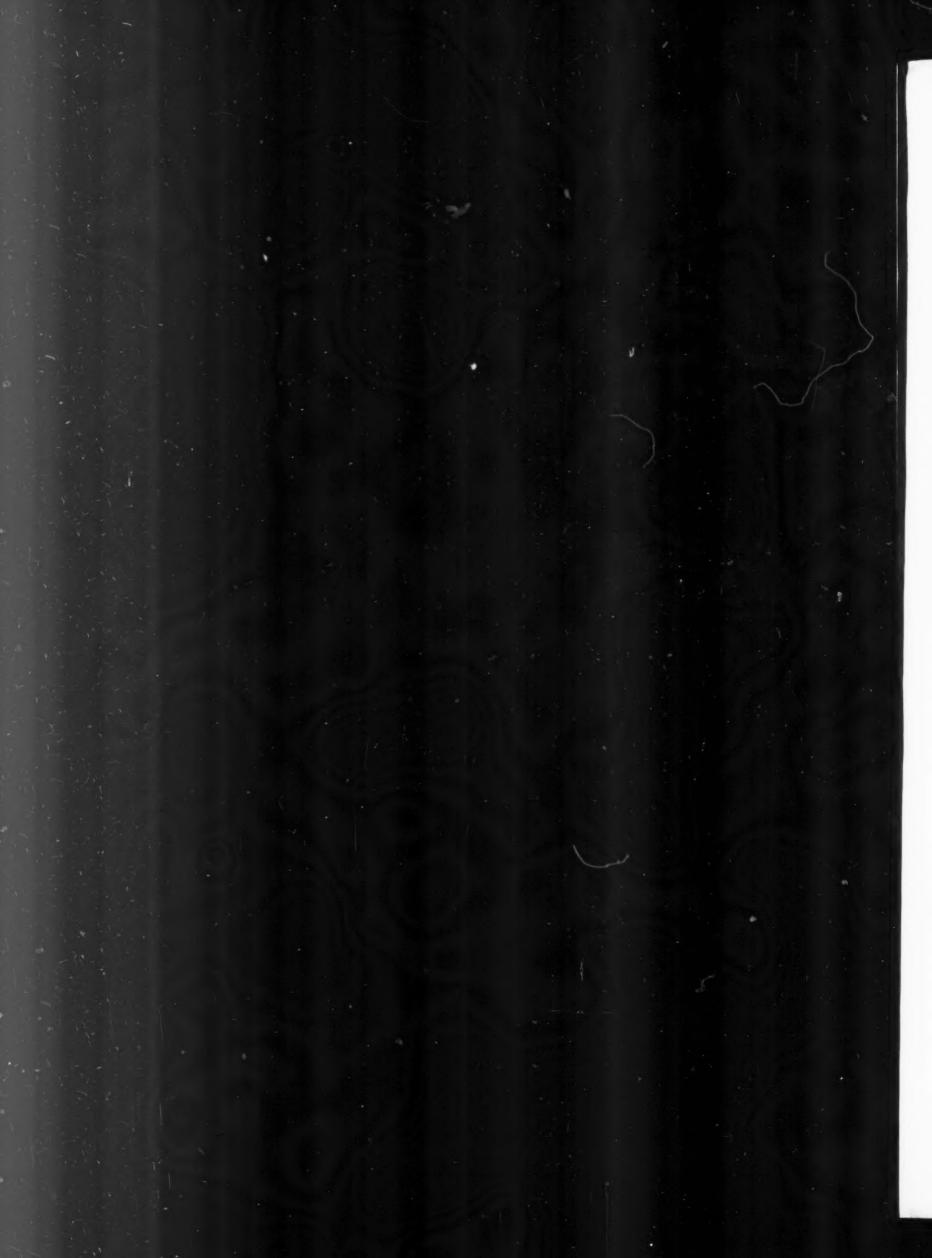
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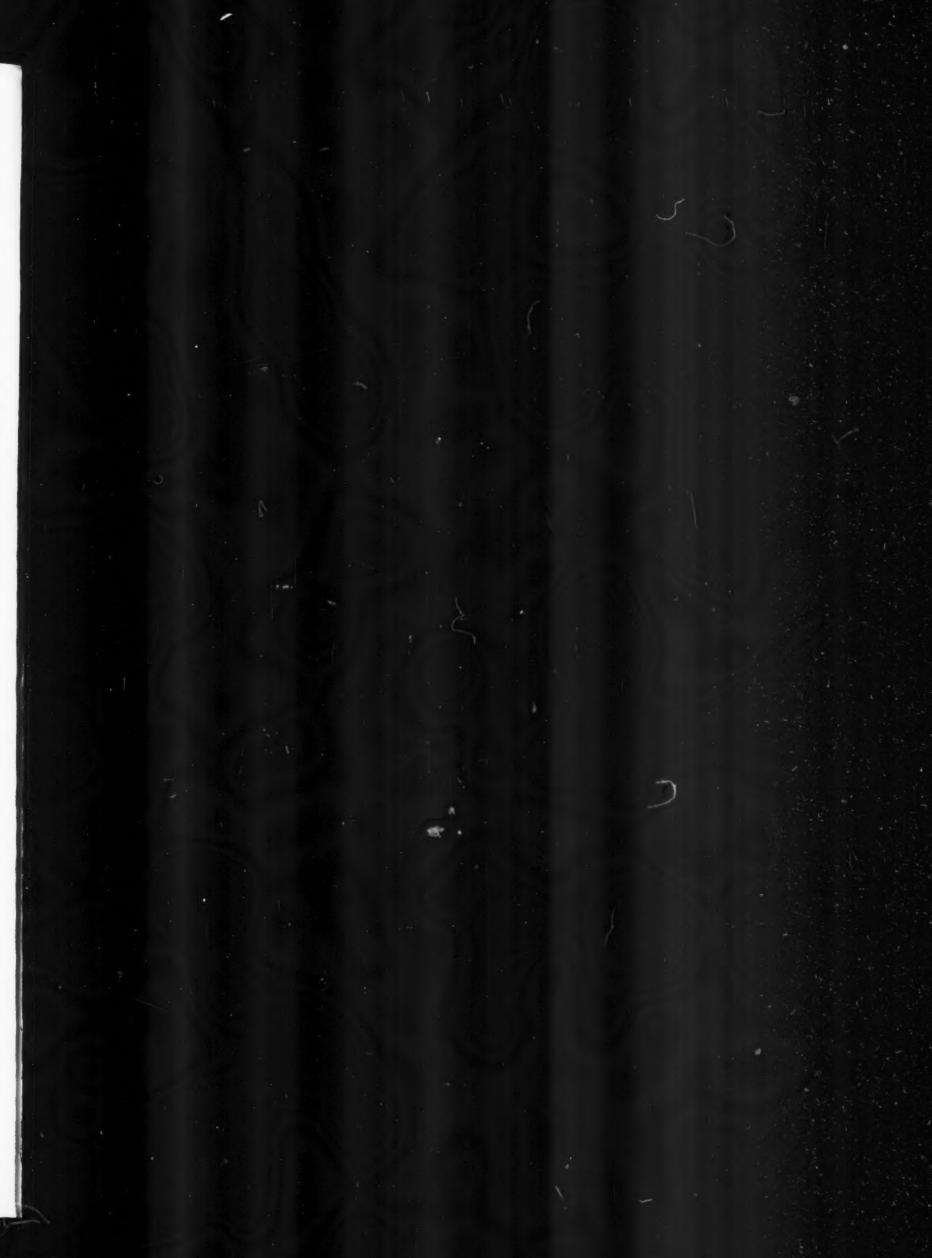
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(Jush Jimen

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Irish Linen—for over a
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designers—today and for
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style leadership you
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the "Fabulous" print of his proud, urbane suit-dress for Spring.

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achieves soft shimmering lustre and
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expressions of the dress designers' art.
Indicative of the great versatility of Bemberg
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For spring . . . pale, delicate, creamy beige in fine dressmaker cloth by Hockanum,
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can cause a lot of discussion . . . but there's never any argument about Riegel Shirtings.

Mother likes the way they wear and wash . . . while the men folks go for the brilliant colors and eye-catching patterns. Wear them with well-tailored slacks of Riegel's "160" Washable Rayon, and you have a rich and rugged outfit . . . sure sellers in any market.

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spring and summer wardrobe exciting prints by €V€RFA/T'... wrinkle-resistant EVERGLAZE' products

All the new EVERGLAZE*

products have this wonderful combination of properties:

> Sun Worshipper-Smartly sophisticated chemise sheath with peg-topped skirt is designed to be worn alone or with an optional button-on shoulder stole.

wrinkle-resistance spot and soil resistance do not shrink or stretch out of shape easy to cut, sew, tailor wash beautifully-iron easily durable-look better, last longer comfortable to wear, controlled porosity permits the fabric to breathe no starch required crisp lustrous finish lasts

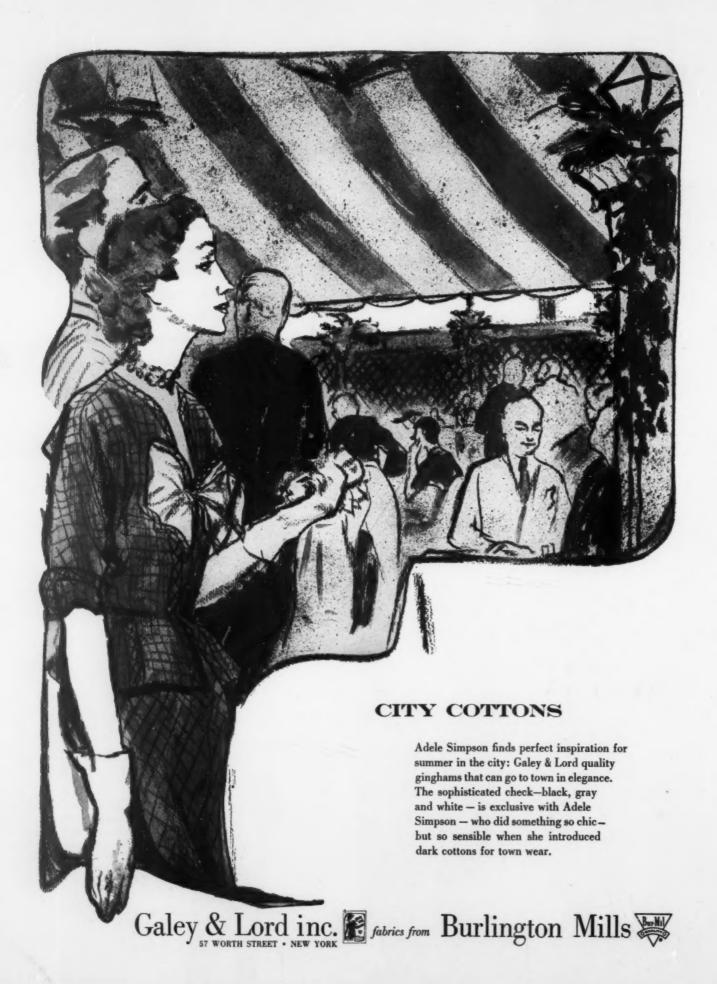


Playtime-Figure-flattering draped strapless bra is gathered and tied at the center front. The brief tailored shorts have a hip pocket.

> *A trade-mark signifying fabric finished and tested according to processes and standards controlled and prescribed by Joseph Bancroft & Sons Co.

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The Costume Look for Town-The flaredback, full length coat with smart elbowlength sleeve is lined with the same print used in the simple, fluid lines of the dress.



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achieved by artful blending of
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stores. For other stores
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"fine fabrics
are the foundation
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translating the velvet tradition

of the first Renaissance

into modern texture, subtle surface-

pliancy, clarity, casual elegance.



an achievement of our era by

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Other



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inspiration:

ITALY

whose great Renaissance heritage is now stated in clear new terms. Whose contemporary art is casual, refreshingly simple. Whose special exhibit tours America today, testimony to a current Renaissance of Design.

achievement:

MINIM-VELVETS

completely current concept of velvet. Amer-Mill's variation of this traditional fabric is a counterpart of Italy's art today: fresher, lighter, infinitely more casual.

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To this growing men's wear market we present: DONATO (acetate rayon and viscose rayon) for durability.

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Donato

18, NEW YORK

modern art from
"Italy At Work" exhibition
photographs courtesy of
House of Italian Handicrafts, New York

AMER-MILL FABRICS

fall 1951 collection



MINIM-VELVETS

VELDONNA... depth and loft for luxury... fine filament viscose rayon

DONATO... surface density for durability... acetate rayon and viscose rayon

VELVYLON... mat jersey with fluidity, stability... acetate rayon and nylon

DOESKIN-GABARDINE

DOVADENE... frosty surface, unvarying smoothness ... acetate rayon and *Totarn

SUEDE-TWILL

DULCIMER ... finely etched face, rich resilient hand ... acetate rayon and *Totarn

CRISP RIBBED TEXTURES

AMEROCCO...(ottoman) pronounced substance, subdued lustre...acetate rayon and *Totarn

CARETTA...(bengaline-faille) sparkling firmness...acetate rayon and *Totarn

TRANSITION...light-bearted, light-banded springiness...high twist acetate rayon and viscose rayon

NYLON MARQUISETTE

NYLOSETTE...the ultimate in beauty and practicality...Du Pont nylon

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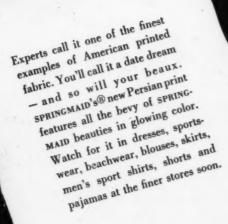
GODEY...gentle grace, vitality of drape...acetate rayon and viscose rayon



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^{*}Totarn is American Silk Mills' exclusive yarn . . . high tensile and crease-releasing.





The Springs Cotton Mills

Lancaster, South Carolina







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Man's ability to produce fibers through chemistry at a time when Nature cannot meet the world demand is one of the great achievements of science and industry. It ensures an adequate all-over supply; but, more important, it enables mill and manufacturer to convey the best of the fashions to the most people at prices everyone can afford to pay.

No small part in the phenomenal success of the new blended-fiber fabrics is due to the sympathetic finishes which have been developed in parallel with the new fibers. The right HAND, for instance, has done much to dispel the consumer's question of an untried blend; it has enabled the merchant to call into play the effective force of TOUCH as a selling agent.

Because Cliffside was born and grew up during the Era of Blends, it is natural that its thinking as well as its equipment should be attuned to the needs of the newer fabrics and fibers. If your company is being held back from making the most of the blended fiber opportunity by any problem in dyeing or finishing, perhaps Cliffside modern equipment and modern thinking can be of help. Many of the outstandingly successful new blended fabrics now marketed by progressive mills reflect Cliffside dyeing and finishing which have assisted in their introduction to the public.



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FASHION-QUALITY-VALUE WITHIN THE BUDGET OF THE

MASS CONSUMER, BOTH HE AND THE RETAILER HAVE FOUND

FAST AND PROFITABLE ACCEPTANCE.

Among those who are happily endowed with both the technology and the resources to give the people of this nation that rare combination of Fashion-Quality-Value are the Mooresville Mills of Mooresville, North Carolina.

Mooresville begins by recognizing one basic underlying fact... that the trend of the great majority of the American people is more and more towards casual living. This recognition, plus the capacity to produce the fabrics that will meet this demand, are cornerstones in the Mooresville plan of operation.

HOW MOORESVILLE

Here at Mooresville we approach the building of a new season's lines by asking ourselves three questions: (1) what basic fabric types are needed; (2) in what colorings and patterns; (3) at what price level to enable the manufacturer and retailer to distribute fashion goods economically and profitably. When these questions are answered satisfactorily, Mooresville's merchandisers turn to Mooresville's





technologists and say: "Here are the designs and colorings; we need (for example, using our 1951 lines) an all-viscose, yarn-dyed, completely washable cloth with the springiness of a fine worsted and the soft hand of a good Shetland; it must needle easily for mass sewing methods, and drape softly without diminishing the pattern effectiveness . . . and we must be able to sell it within the mass-producer's allocation for fabric."

And it is only when these Fashion-Quality-Value specifications are met that Mooresville is ready to come forward and say to America's manufacturers and retailers:

HERE are the right fabrics at the right time at the right price to enable you to sell more goods at a better profit.

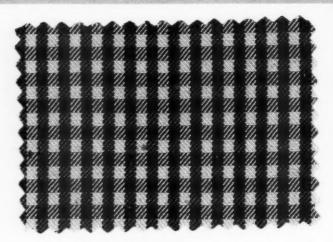
For an actual demonstration of Mooresville's capacity to produce and provide America's alert manufacturers and retailers with these three-way right fabrics, we call your attention to a collection of fabrics from Mooresville's Fall Line.





Mooresville Tattersalls

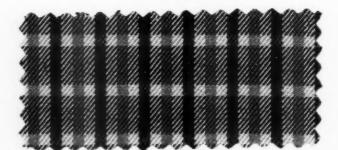
(3 color combinations)



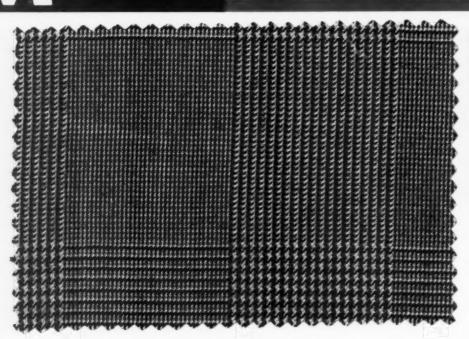
Mooresville District Checks

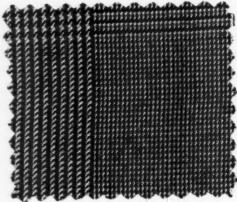
(7 color combinations)





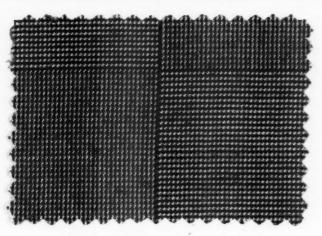
ooresville rayons enable the retailer to



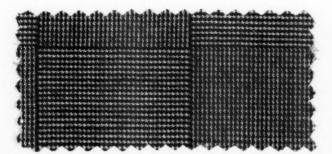


Mooresville Glen Urquhart Plaids
(3 color combinations)

- Q. How Do They Wash?
- A. You can wash these Mooresville all-viscose fabrics any way you like. With ordinary care and handling, they don't need pampering in either washing or ironing to retain their freshness indefinitely.
- Q. Don't All Rayons Crease Badly?
- A. Some rayons do; but the Mooresville all-viscose rayons are so woven and finished that the wrinkles fall out. Result: fresh, crisp, quality-looking fabrics always.

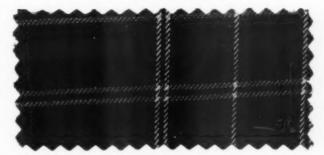


Mooresville Hairline Blocks (3 color combinations)

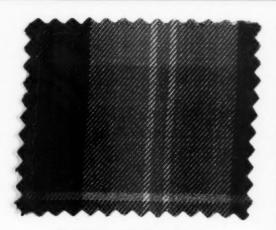




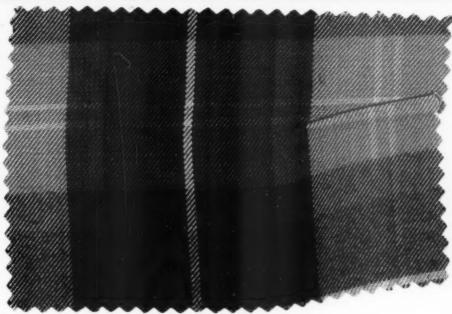
Mooresville Clan Tartans (Hunting MacDuff, Royal Stewart, Dress Stewart, Black Watch)



merchandise top fashions at the mass level



Mooresville Bold Plaids (3 color combinations)



Q. Are the Colors Guaranteed?

- A. These fabrics have been yarn-dyed with the finest vat colors. In the sun, in the laundry, even when boiled at high commercial-cleaning temperatures . . . the day you discard these fabrics their colors will be as clear as the day you buy them.
- Q. Are These Men's Sportswear Fabrics or Women's Suitings?
- A. They're designed for both . . . and for many other types of fashion goods. Sportswear, men's slacks and shorts, women's wear, skirts, boys' and girls' apparel, and many more profitable items can use these Mooresville fabrics.



MOORESVILLE

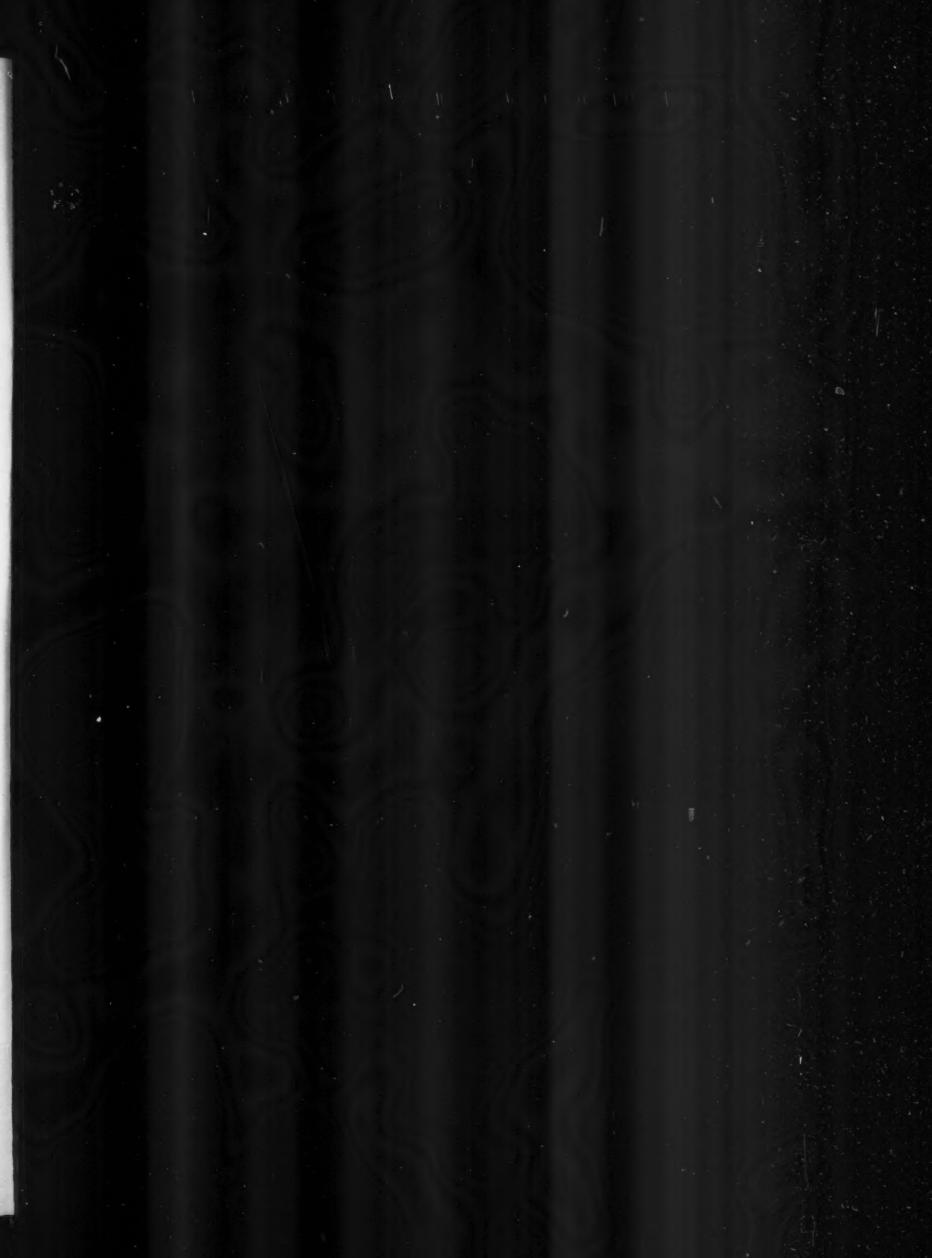
is not just a Mill... but a Merchandising Philosophy

The basic philosophy of Mooresville . . . the philosophy which is Mooresville, is this: BE READY WITH THE RIGHT FABRIC FOR THE RIGHT FASHION AT THE RIGHT TIME. It means being ready to help you meet the vast and profitable mass-demand for fashion fabrics when you can make the greatest profit. Mooresville has the men, and the materials, and the technique to make this philosophy a reality. That is why the soundest manufacturers use so many Mooresville Fabrics to make the soundest fashions.

MOORESVILLE MILLS

Mooresville, North Carolina

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707 South Hill Street, Los Angeles, Cal.





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and in 1951 it will be BOTANY BRAND



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V C A L

VICALAINE

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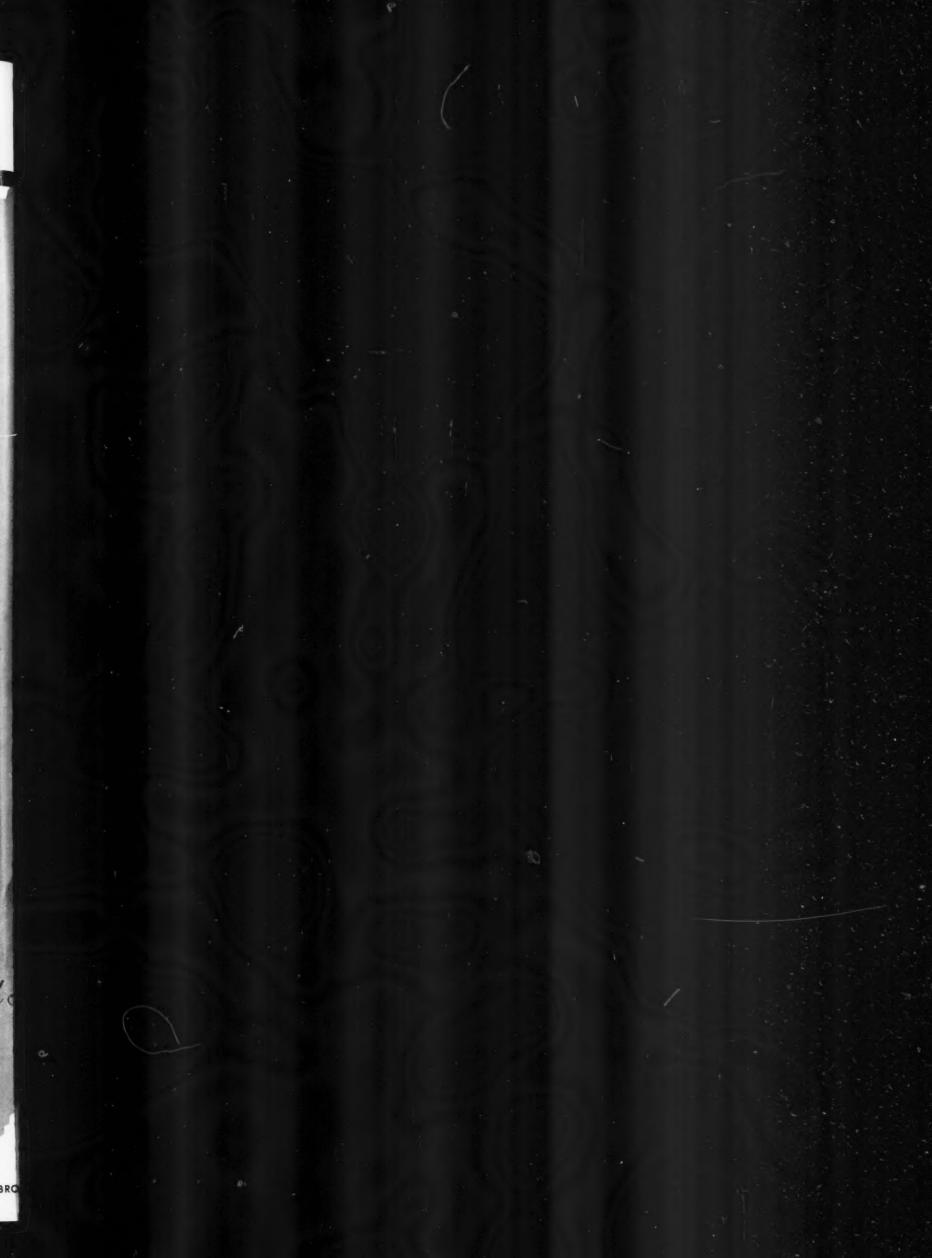
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Benenson Original in VICALAINE

a worsted-vicara zersey which highlights her Fall Collection

ADWAY NEW YORK 18

it's not only the fashion.

... but the fashion future of your fabrics...

that brings customers back for more

insure the future today with the

SANCO

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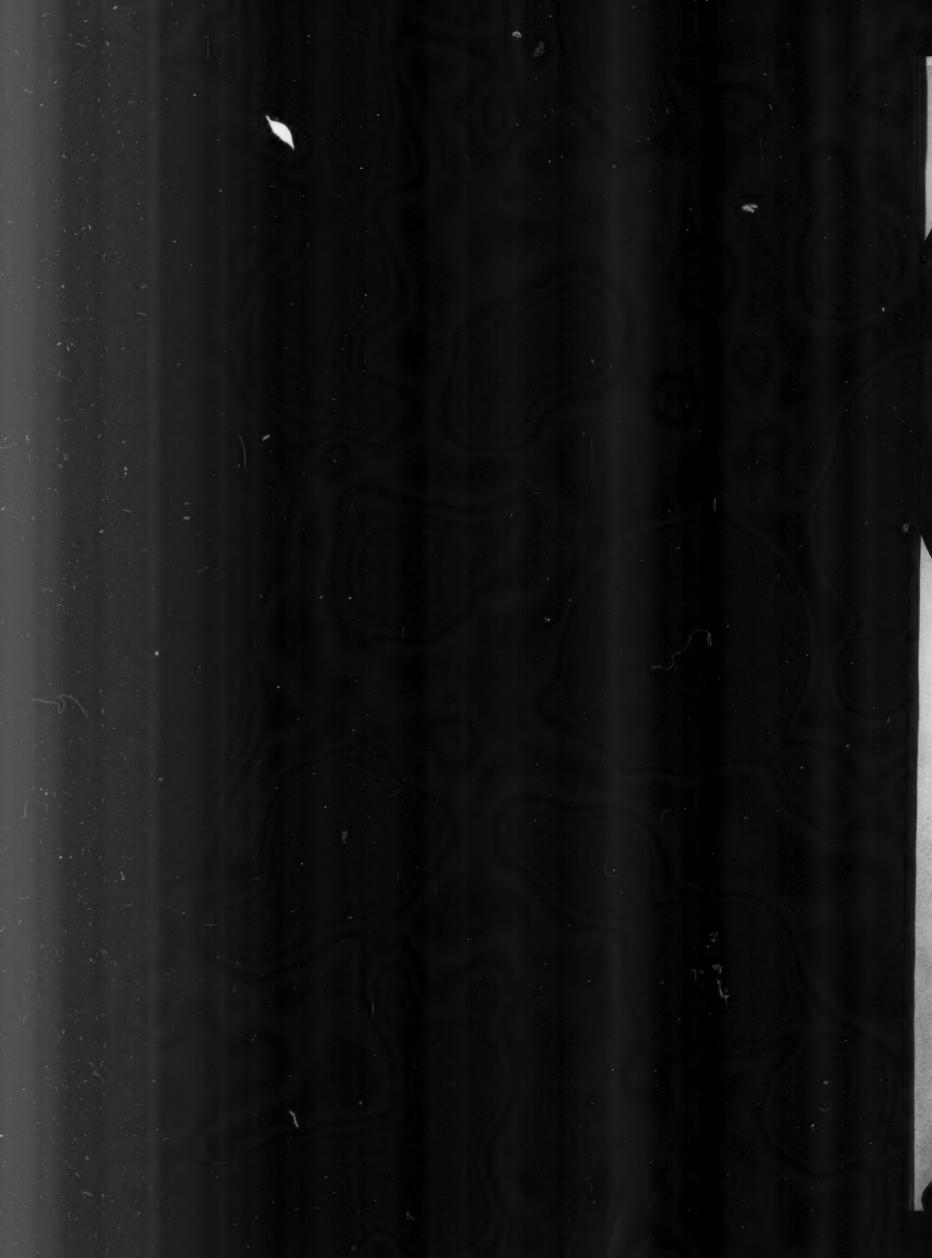
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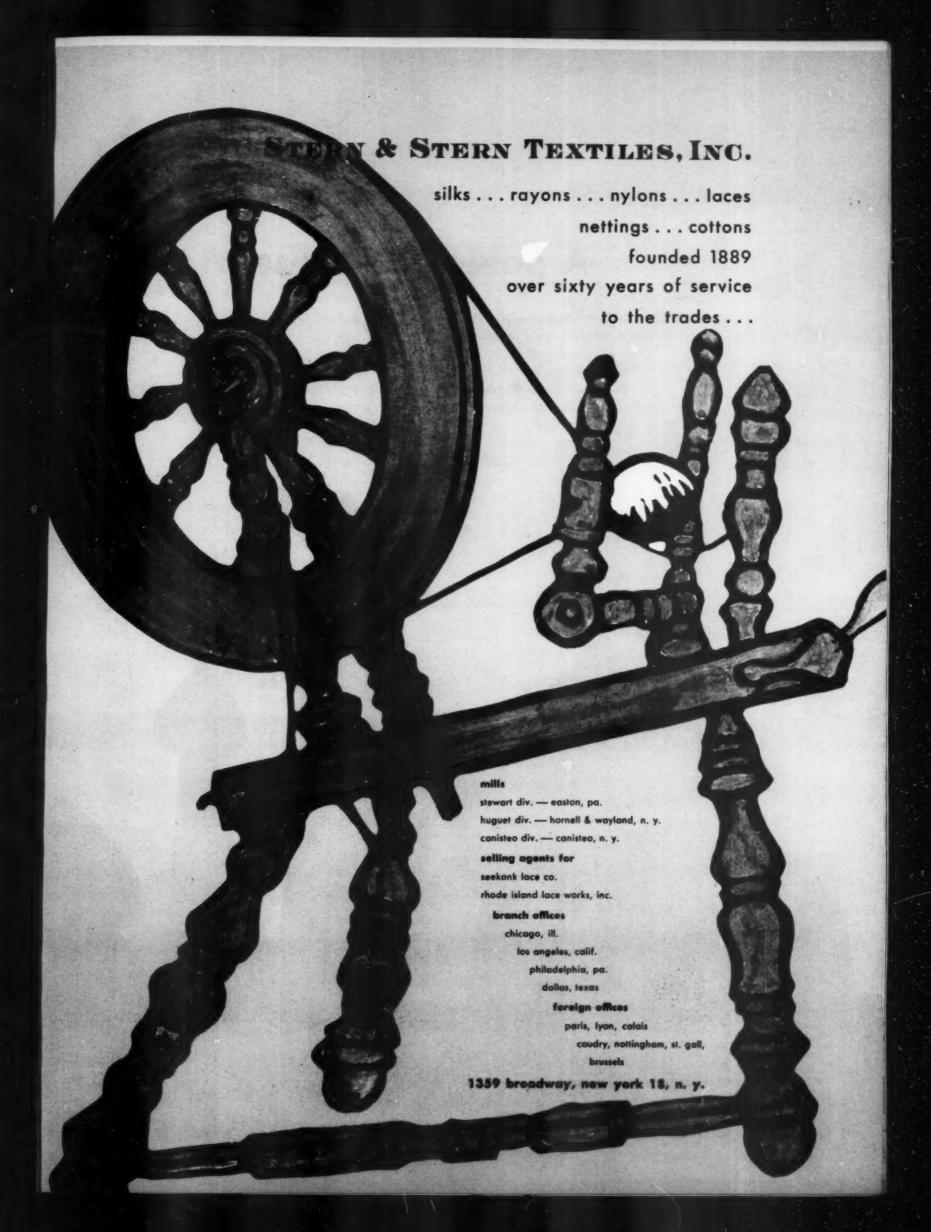
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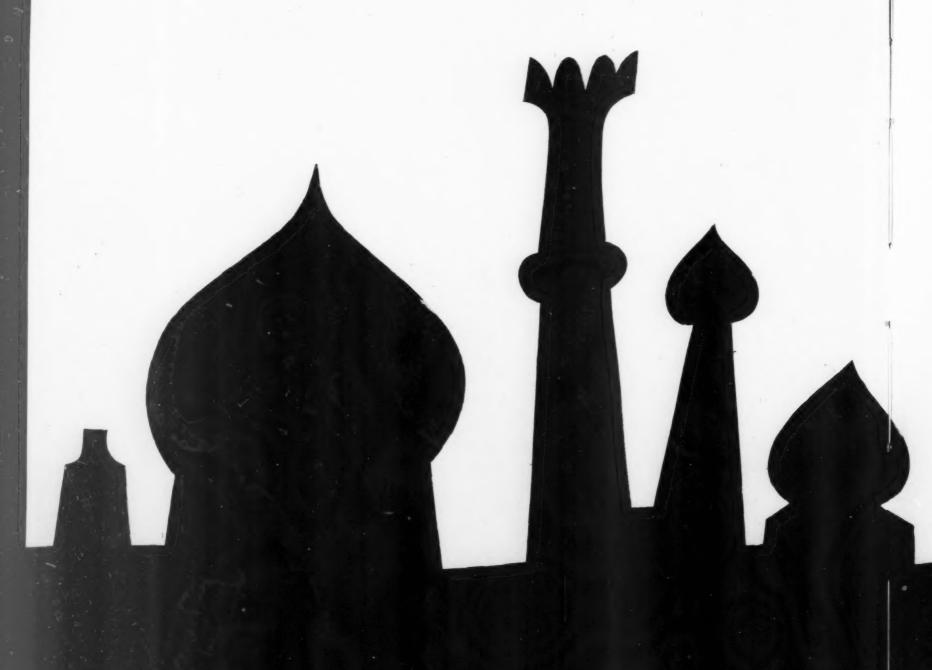




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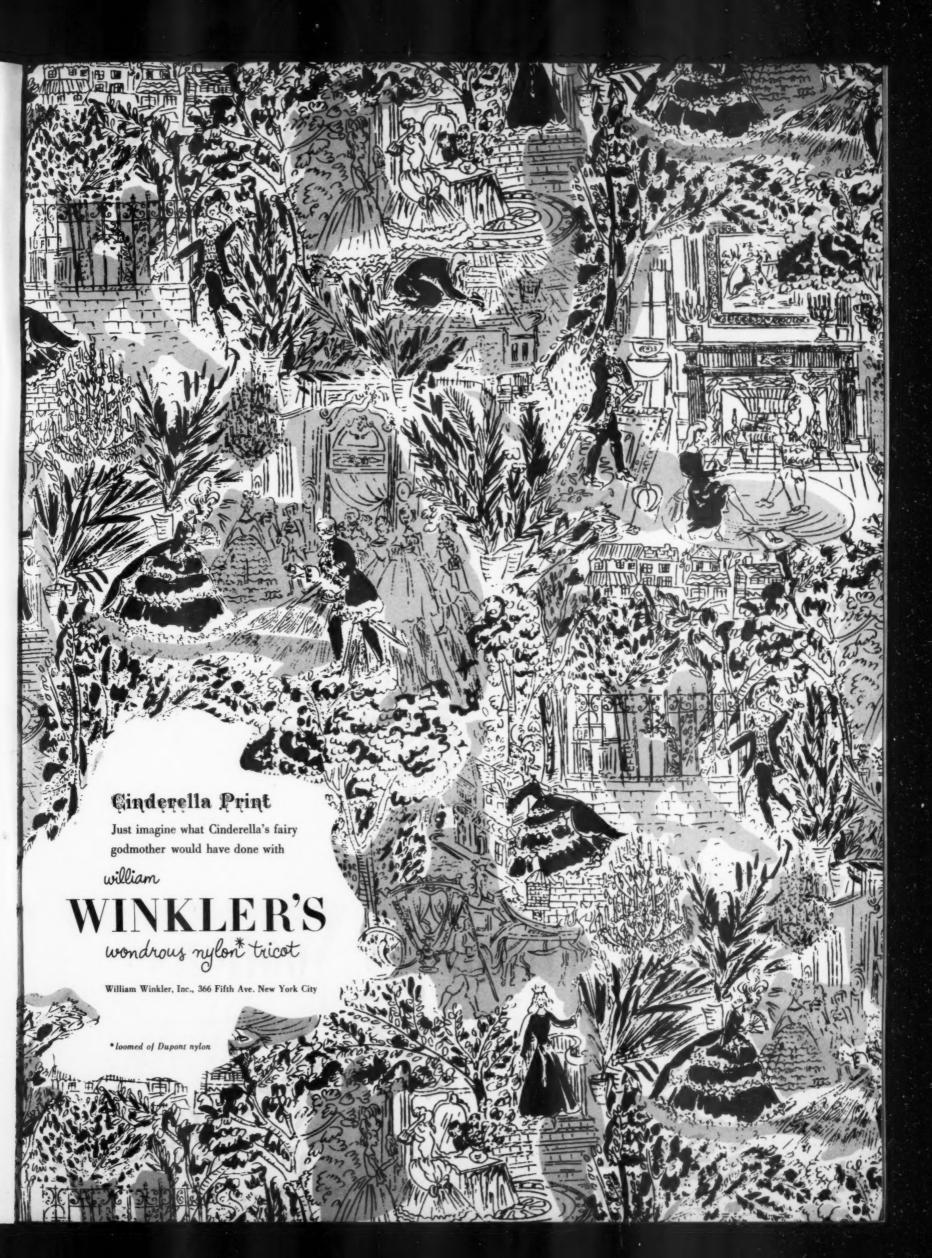
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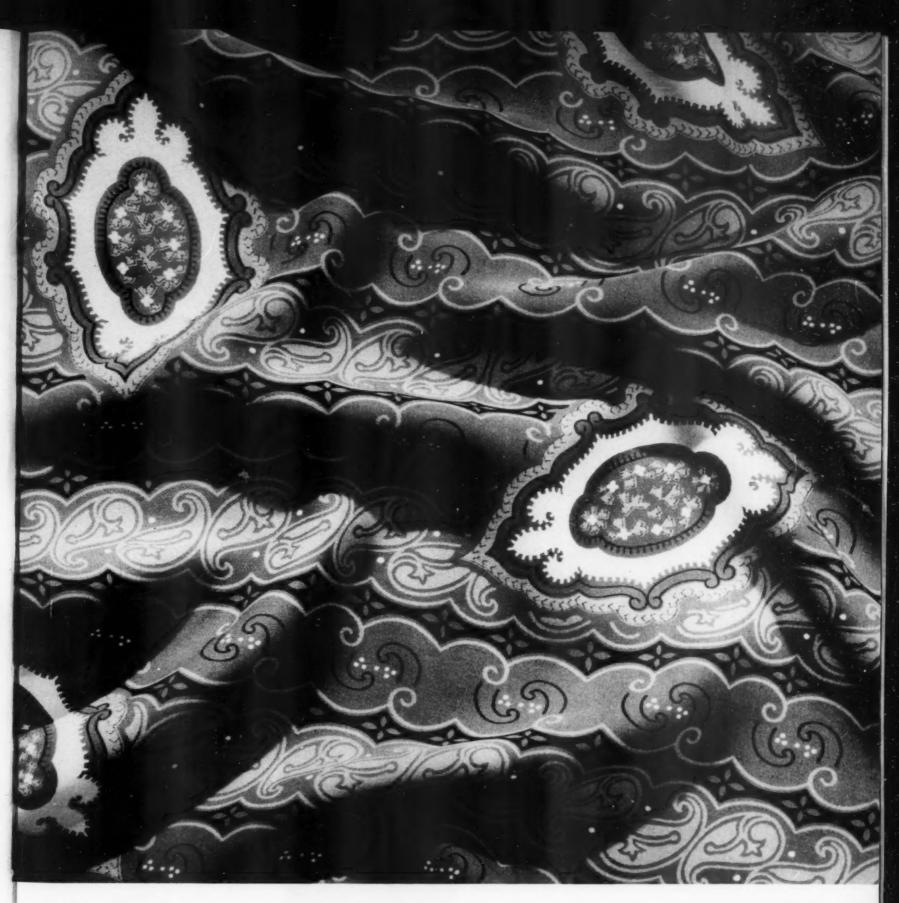
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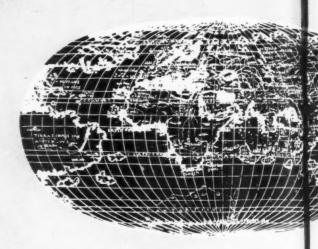
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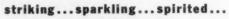
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COHAMA* design inspirations



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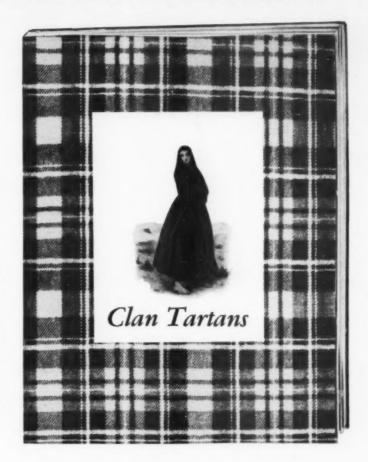
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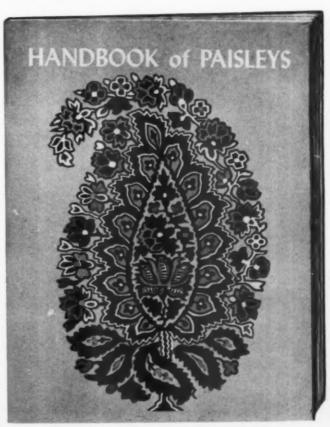


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PAISLEYS

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Since it is frequently necessary for more than one person in your organization to use the Portfolio of Paisleys for your creative projects, we have reprinted a small quantity of the sheets which appear within this issue of AMERICAN FABRICS, and bound them in a special full-color cover, as a Handbook of Paisleys. Thus it is needless for you to damage your copy of the magazine by tearing out any of the Paisley pages you may require at a given time, and you may keep it intact as a permanent reference book. The wealth of material in the Handbook is identical with what is printed in this issue. Price: \$2 per copy. Orders will be filled while the limited quantities are available. Send your order with remittance to AMERICAN FABRICS, EMPIRE STATE BUILDING, NEW YORK.



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CREATIVE THINKING VS CREATIVE STARVATION

THE QUOD ERAT DEMONSTRANDUM... that the solution to the industry's problem of Creative Starvation lies in Creative Thinking... has been written in rich black ink on the records of those companies which had the vision and the courage to produce and to promote merchandise fitting to the theme of Clan Tartans during the year 1950.

In Volume 14 of AMERICAN FABRICS, the issue in which appeared the first intimation to the industry that within the colorful group of Clan Tartans lay a great wealth of commercial potential, we also wrote:

"... in the industrial world, and especially in the field of textiles and allied manufacturing, the vacuum is the result of an economic surfeit combined with Creative Starvation... The very giantism of the productive machine which helped to win the war could very well prove to be the harikiri knife of suicide ... if it were permitted to continue replacing the vital oxygen of creative stimulation with the void of pointless production... We have not given the consumer sufficient emotional stimulus to generate purchasing activity in the soft lines. And until we do, we face the probability that the textile industry will fare no better than today ... and it could do worse."

The foregoing words appeared at a time, you recall, when both the producers and the sellers of textiles and fashion merchandise were in a quandary. The first shots had not yet been fired in Korea; the Government had not yet settled down seriously to the procurement of military supplies; Worth Street was still working hard to sell cotton 80-squares at $20\frac{1}{2}\phi$, 68's at $17\frac{1}{2}\phi$; acetate 180 x 60's at $31\frac{1}{2}\phi$ had few takers; wool 64's were quoted in the Australian auctions at \$2.43\frac{1}{2}\dots. And the selling at retail of fashion goods and home goods made of textiles was bogging down.

It was at that point that AMERICAN FABRICS, as an antidote to the debilitating effects of *Creative Starvation*, offered the theme of Clan Tartans. Many good mills and manufacturers were open-minded and alert and flexible enough to transform the

thought into actuality; literally thousands of retailers went along with them in their thinking, bought Clan Tartan merchandise and sold it in impressive quantities. In fact, all through the Fall season of 1950 it was virtually impossible to thumb through a magazine or newspaper, to pass by an important retailer's windows anywhere, without encountering finely styled merchandise made of fabrics in Clan Tartan patterns.

Where Will Mills Stand in 1960?

Government officials have stated openly and clearly that this nation is committed to a ten-year armament program. Some advocate this step as the only effective means of preventing war with Russia; others who believe we must ultimately be embroiled with Communism favor rearmament as essential preparedness. For whichever reason, industry and people will be called upon to provide the arms and the hands for a vast armed force . . . and the textile industry once more will be pressed to supply the many millions of yards and millions of pounds of fibers needed to equip and arm such an army.

Under such conditions, with the return of boom conditions in the textile industry, it is inevitable that there should exist a strong temptation on the part of mill executives to confine their production to a limited number of constructions; that converters should consider reverting to the practice of offering either solid color goods alone, or patterns noted only for paucity of variety and creativeness. We make no pretense at attempting to dictate to either mills or converters the path they should follow, but we do find it necessary to remind the industry of certain elementary facts and figures.

Current Production Facilities are Enormous

The productive capacity of the enormous American textile industry today far exceeds that of 1945. That year the country produced 8,018,473,000 yards of cotton, rayon, and other woven goods in an all-out war effort; by 1948 production was raised to 8,822,000,000 yards. It can be expanded even

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further, and undoubtedly will be expanded further as mills compete for not only increased Government orders but for increased civilian business. Thus, while well operated mills will probably do a substantially increased volume of business and show a substantially improved net profit, the probability also remains that the best volume and profit showings will be made by those mills which retain some margin of flexibility and creativeness in their production.

But, it seems to us, what is of paramount importance to the individual mill owner is the question: WHERE WILL WE STAND TEN YEARS FROM NOW? Will we find ourselves again faced with the problems of 1949 . . . with looms brought to a stop by Creative Starvation? Or will our company be so entrenched in the minds of our customers as an exponent of Creative Thinking that our business is safely removed from the threat of profitless production-for-a-price?

The Famine Need Not Follow the Feast

Above all, will it be necessary for mills to suffer again because of the consumer's apathetic attitude to the repeated use of uninspiring fabrics? Some within the industry were quick to explain the consumer's coldness to soft lines by the availability of long-absent hard goods. Too quick, we believe, because the degree of success with which the industry sold Clan Tartans . . . and, in fact, the wholesome reaction of the consuming public to many individual mill promotions while fashion business was generally below a desirable level . . . proves that even at the height of the consumer-spending for new automobiles, new television sets, new refrigerators, laundering machines and homes, there still remained sufficient spendable income to bring a satisfactory return to those mills which worked earnestly and arduously at the level of *Creative Thinking*.

Building Between Now and 1960

The next ten years, if the Government's armament program continues, offer to the textile industry the opportunity to build

a position of greater security by the year 1960. The virtually assured profit status of mills, under such conditions, will make it entirely feasible as well as advisable to promulgate a program of Creative Thinking. At the same time, just as an athlete finds it necessary to keep in training lest he lose the delicate sense of timing, just so must the mill executive and his personnel keep their thinking at the creative level even when current economic conditions do not require it . . . so that when it becomes necessary for mills to counter the body blows of price-competition with the rapier thrusts of Creative Thinking, the reflex will be smooth, instant, and effective.

To those executives in the textile field, and indeed to all those who are concerned with ways in which both fabrics and fashions may retain a profitful position in the national economy, the Editors of AMERICAN FABRICS propose

PAISLEY

AS AN INDUSTRY-WIDE FASHION PROMOTION THEME FOR FALL 1951

A full understanding of the fashion selling possibilities which lie within this category of designs, as well as a broad concept of the practical manner in which its wealth of appeal can be turned to the advantage of the soft goods industries, may be gained from the following comprehensive study of PAISLEYS: THEIR HISTORY AND POTENTIAL USE.

Portfolio Paisleys

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A Creative Project for the American Fabric and Fashion Industry

D In these pages the Editors of AMERICAN FABRICS present the second of a series of answers to Creative Starvation. A superb collection of inspirational ideas relating to the Paisley theme has been arranged for practical application, together with specific suggestions for the use of the Paisley theme by various industries ▶







dormant for years, or for centuries, but ultimately its intrinsic merit brings recognition and utilization. In proposing to the textile and associated industries that the Paisley patterns be used as the theme for a unified and industry-wide promotion, we respectfully point out that an art form which could so successfully travel from a hidden corner in the deep Orient thousands of years before Christianity to the fashion salons of the Western world in the 19th Century, must possess innate soundness which is reflected inevitably in public acceptance.





Paisley . . . Answer to Creative Starvation

Any dissertation on the Paisley pattern must necessarily begin with the statement that there never actually existed a Paisley shawl; the article to which the weaving community in Scotland lent its name was a product of Kashmir and Persia both in origin and in spirit. What the weavers of Paisley accomplished was to develop machines and methods for producing facsimiles of the precious Kashmir shawls in such quantities and at such a greatly reduced cost that what had hitherto been confined to the wardrobes of the rich and the noble could be the prized possession of women everywhere.

A Name is Born

By the very process of making it possible for many hundreds of thousands of women in all walks of life and in all countries to possess these shawls, the name of the weaving town from which they emanated came to denote the style; and that is how these shawls, and thereafter the types of fabric bearing the woven or printed designs associated with them, came to be known to the world as Paisleys.

The first recorded reference we have to Kashmir shawls is that they were worn by the wives and mistresses of the Roman Caesars. The basic elements of design most commonly used in Kashmir shawls are familiar to the students of archaeology, who have found them in the costumes and household goods of ancient Persia and Egypt. The cone (or seed pod) as the basic theme most frequently encountered in specimens of antique Kashmir shawls, was a symbol of fertility thousands of years before the advent of Christ.

Kashmir Beginnings

Set at the northwest corner of India, and nestled beneath the Himalayas, Kashmir lies high above sea level and has for centuries been noted for the fine quality of hair on the goats indigenous to this mountainous area.

Because of the high altitude of the country, the natives from time immemorial used the warm fleece of the Kashmir goat for clothing. But for the nobility of the country was reserved the finest portion of the goat's fleece, the *pashmina*, which came from the very soft underwool. It consists of long, silky hairs of fine texture; in some cases these were woven alone, in other cases the artisans used a core of a single silk thread and wove the Kashmir yarn around it for strength.

It is almost a modern story we relate when we pick up the first threads of the Kashmir shawl's history in the 13th and 14th Centuries. At that time the Vale of Kashmir was in the center of the trade routes coming to Persia from the east, and India from the west and south.

Through the course of many centuries there developed in Kashmir the craft of shawl-making. So highly esteemed were the works of these craftsmen that, as caravans traveled through the Vale of Kashmir, among the most eagerly sought articles for trade were the shawls. They reached the courts of China, Persia, and Rome. Marco Polo brought several back to the occidental world from his first land trek to the orient; and by the middle 14th Century the fame and the economic value of Kashmir shawls were such that the Shahs and the Mogul emperors of the time took steps to encourage the development of this native industry.

Aside from the fine texture of the cloth used for Kashmir shawls, their distinguishing characteristic has always been the embroidery which, even in the coarsest work, displays an unsurpassed richness of design and blending of colors. This embroidery falls into four main classifications in the making of the shawls.

AMLI. This style of work, the most beautiful and used on the most valuable Kashmir shawls, is done mainly in cashmere thread on cashmere cloth. There are examples, however, in which the design has been worked on either silk or cotton. In this type, the design is worked in tiny, almost imperceptible stitches which completely cover the ground in an elaborate pattern. None of the ground can be seen, and the stitches are so close that it is difficult to insert a pin between them.

CHIKAN. This work is done in satin stitch with silk, cashmere or cotton thread. The designs are mostly floral, but do not cover

(continued)















NOTE on AUTHENTIC PAISLEY COLORS

These are true Paisley tones, chosen from old Paisley shawls. Though somewhat muted, they retain the vibrancy which contributed much to their appeal. This is another reason why Paisleys, attuned to the current trend in colors, are logical for both apparel and home decoration fabrics.



Woman in Paisley Short : Painting by Sir Henry Rueburn (1756-1823)

The PAISLEY SHAWL

A 19th Century Fushion Wedge into Western Europe and America

Its underlying soundness and universality of appeal carried the Paisley Shawl from the hidden. Vale of Kashmir to the fashion salons of the entire Western world... and in the process it served to create one of the phenomena of the textile industry's 19th Century history.



The PAISLEY SHAWL did not Originate in PAISLEY

By the time (circa 1800) the weaving town of Paisley in Scotland first tried to duplicate its richness, the Kashmir shawl had a history of at least two thousand years. Recorded history makes note of Kashmir shawls in the times of the Roman emperors; undoubtedly they were in use before then.

The Vale of Kashmir, where the shawls originated, is in the Himalayan area near the northwest corner of India. Well above sea level, it nourishes a breed of goats with superbly long and fine hair. Native women collect the very soft underwool (pashmina), then sort, clean and treat it with a rice paste before it is spun into fine thread. Sometimes a single strand of silk is used as the core to give added strength.

A good Kashmir shawl took as long as three years to design and make. For this reason, in addition to the value of the fine wool, Kashmir shawls were worn only by the royalty and the rich of the East. When, about the year 1378, the Shah of Kashmir stimulated the making of these shawls (with an eye, undoubtedly, to the lucrative trade with merchants from the West), the first Kashmir shawls made their appearance at the Court of Russia. This is the furthest point west to which the Kashmir shawl went on a straight line; its introduction into France and England came later, by way of Persia into Egypt and thence to the Continent in the knapsacks of Napoleon's officers.

Despite their high cost, Kashmir shawls grew in such great demand that attempts were made first in France, then in Norwich and Edinburgh, to duplicate them. It was not until around 1800 that a Mr. Paterson in the weaving town of Paisley, Scotland, wove the first Indian shawl.

Paisley was an important weaving town from the times of the Stuarts. Renowned for its silk, gauze, fine lawn and damask, its weavers possessed the techniques necessary to copy the Kashmir designs. Over a period of years they so dominated the field of manufacture that the Kashmir shawl came to be known throughout the world as the Paisley. This dominance lasted only seventy years (until 1886) but the name remains until today.

The Kashmir shawl reached its height in fashion during the period of 1850 to 1860 when every French bride of sufficient wealth included one in her trousseau.

Paisley . . . Creative Answer (continued)

the entire ground nor are they as closely stitched as in the Amli. This type is most popular for curtains, bedspreads and similar articles. Closely allied is the Chhabi work, in which white embroidery is used on a white ground.

DOORI. This is a knot-stitch embroidery technique, done in one color only, generally matching the color of the ground. While less costly than the foregoing types, it is rich and restrained. IRMA. This is a chainstitch type of embroidery, the least expensive and the coarsest of all Kashmir embroidery. Generally found on rough homespun or inexpensive cotton, the design covers the entire ground.

The shawls which were brought by roving armies and caravans to the courts of the Western world were mainly of the Amli quality. The first references indicate that, traveling through the southern passes into Caucasia, and then northward, Kashmir shawls were seen at the court of Russia. Somewhat later, Napoleon's officers brought back to Italy and France shawls which they obtained during their Egyptian campaign; and thus Europe's women initiated the vogue for Kashmir shawls which culminated in the development of the shawl industry in Paisley during the years from 1800 to about 1870.

Making of the Original Shawls

The preparation of the yarn which was used in the original shawls of Kashmir was, of itself, an elaborate and artistic procedure. When the specially selected hair was gathered, it was first sorted with great care, then cleaned and treated with a rice paste; after this, the fleece was handspun by Kashmiri women into exceedingly fine thread. For the warp, the yarn was spun around a central strand of silk for added strength (as mentioned earlier). Aniline dyes being unknown, the delicate thread was colored with dyes obtained from native plants, roots and rocks; this accounts for the unusual shades of both vibrant and soft tones associated with the designs in Kashmir shawls. After the yarn was dyed, it was given to the weaver to be made into the graceful and intricately worked articles, decorated with a profusion of detail and wonderful harmony of color, which are the models for all textile designers.

The shawls which were copied in the town of Paisley and, in lesser quantities, in Norwich, Paris and Vienna, were either embroidered in *Amli* work, or loom-woven; these were all of the finer qualities, and were naturally selected for imitation because the originals from Kashmir were those most admired and sought after by the middle classes. But there was quite a difference in the methods followed in the manufacture of the originals and the copies.

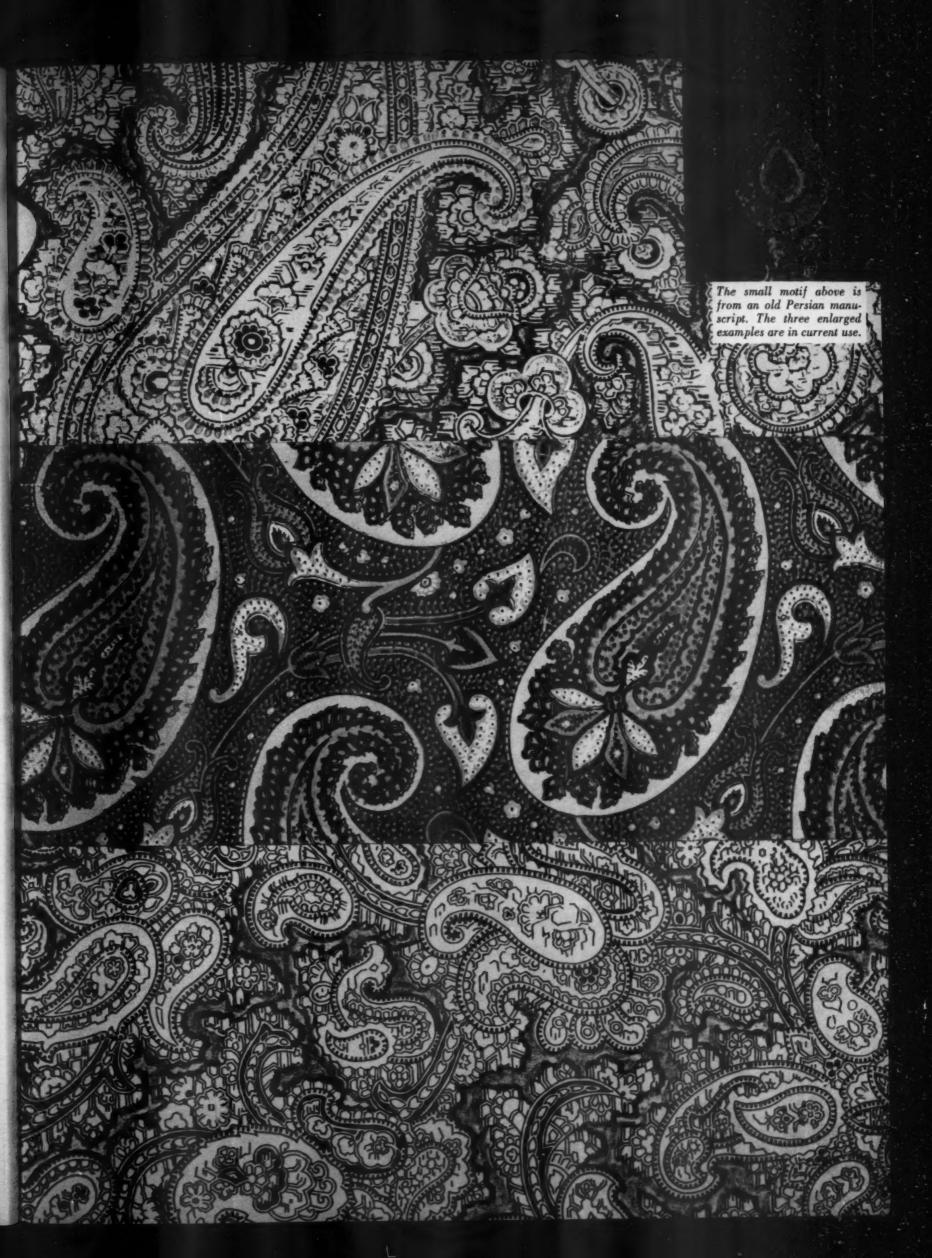
Composing the Paisley Pattern

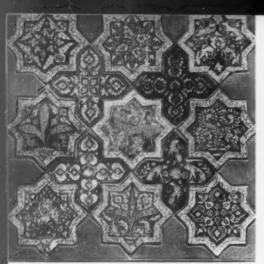
In Kashmir the design was first conceived by a Naquash (drawing master) who spent months, and sometimes several years, composing a pattern. He did not transcribe it to a painted drawing, but gave the design to the Kahan Wool (key writer) who in turn gave to the weaver symbols on paper which instructed the latter in the number and the color of threads to be used. The weaver, without any foreknowledge of the complete design, then set to work with a tray of shuttles filled with different colored threads and worked out the design.

This procedure is still followed in the making of shawls by hand in the Vale of Kashmir, and in Persia. But since the primary objective sought by the weavers in Paisley was to duplicate the appearance of the originals at a much lower cost, mechanical processes had to be formulated which would reduce both the time and the manual labor involved in making a single

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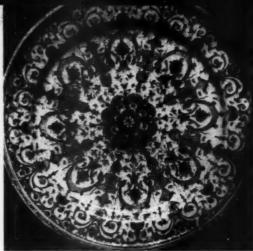




Panel of star- and cross-shaped tiles, Persian, 13th Century. Metropolitan Museum of Art.



An oriental silk coat typical of the Mogul period, in which the favored, authentic Pine motif is clearly delineated.



Characteristic Persian motifs on a plate of faience in the Musée de Cluny in France. This dates from the early 18th Century.



PERSIA WAS A LAND which gave birth to a myriad of productions exquisite in beauty. From the hands of the Persian artist and designer blossomed patterns in a host of rare forms and shapes. It was the Persians, too, who developed many of the vibrant shades which reached new heights of loveliness and subtlety of gradation, and which we reproduce in these pages.

Paisley . . . Creative Answer (continued)

shawl. A fine Kashmir shawl might take three skilled workers a full year to produce; Paisley set out to manufacture replicas in a fraction of this time.

To illustrate more clearly the problems of the Paisley weavers, let us first observe the step-by-step procedure followed by the Kashmiri in making a Kani shawl. Previously we referred to this type as being made in sections, and then sewed together. Actually, the shawl is made up of bits which may be anywhere from an inch to a foot square. Since the usual size of a shawl is about two yards each side, literally hundreds of these pieces are required to make up the whole. At each loom there are two or three weavers, following the instructions of the key reader who calls out the number of threads and the colors to be used. When all are finished, they are carefully put together, almost in the manner of one working out a jigsaw puzzle, and then the master tailor joins them with stitches so fine and close that in the end it is difficult for the eye to tell that the shawl is not woven all in one piece.

At this stage the end borders, or tail pieces, are added; they consist of narrow panels embroidered in many colors. Last of all, the shawl is washed in special water which softens the wool and makes the dyes fast. Now it is ready to brighten the costume of a princess; but rarely does it occur to the lucky owner of a Kani shawl that the equivalent of three years of arduous and highly skilled work have gone into its making.

The Amli shawl, to a lesser degree, is also made of sections which are sewed together at the end. But its main appeal, as well as its intrinsic value, lies in the great complexity of design as well as its high quality of pashmina wool. So fine are some

of the Amli shawls that during the time of the Mogul emperors there arose a vogue for Ring Shawls, so finely woven that a shawl fully a yard-and-a-half square could easily be pulled through a ring!

The Scottish Town of Paisley

These, then, were the types of shawls which Paisley set out to duplicate. Paisley was important as a weaving town from the time of the Stuarts, and had taken full advantage of the lessons to be learned from the Flemish weavers. By the end of the 18th Century the town of Paisley in Scotland was known for silks and gauzes which for a time surpassed the work of Spitalfields, and its reputation for fine lawn and damask was the highest. About the year 1590 most of the 700 population which centered around the old Abbey were listed as wabsters*. By 1766 the town had 855 looms; in 1776 it had 1500 looms; and in 1789 the town's weaving industry gave employment to 12,000 people who worked with wool and cotton and linen. In addition, the introduction of silk into Paisley's industry around 1759 by a Mr. Humphrey Fulton gave birth to still another field of weaving; so that even before the close of the 18th Century there were 7,000 looms busily engaged in turning out a total cloth production valued at much more than half a million pounds.

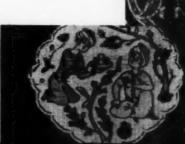
Lest these statistics seem insignificant in the light of the modern size of the textile industry, it may be interesting to draw a comparison between conditions of the 18th and 20th Centuries. Today Scotland has slightly more than 5,000,000 people; in 1801 its population was only 1,600,000. Thus it is evident that the more-than-14,000 workers in Paisley's weaving industry

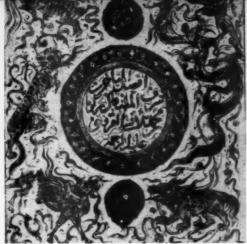
*wabster: meaning weaver



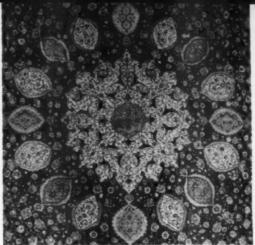








Design for a double title page from a 13th Century manuscript entitled Marvels of Creation of the Timurid period in Persia.



Famous Ardabil Carpet from the Mosque at Ardabil in Persia, 16th Century. The design symbolizes sources of vitality and abundance.



The counterpart to the double title-page shown above left. Metropolitan Museum of Art.

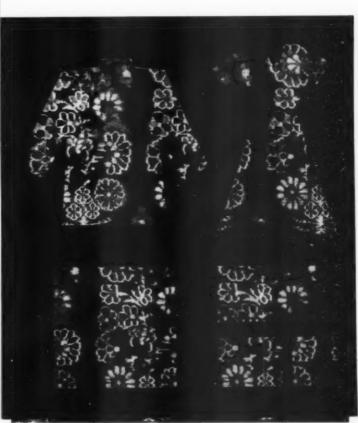
constituted almost one per cent of the nation.

As can be seen, even before the town of Paisley had turned its thoughts to reproducing the magnificent Kashmir shawls, its background and facilities for textile production had already attained a high status. Now it was ready to turn its skilled workers and their equipment to the task of translating the beauty and grandeur of handmade Kashmir and Persian shawls into a product which could be manufactured by Paisley's machines. This is the community's most glorious chapter; for just as the development of its shawl industry raised Paisley in both commerce and fame to the highest level, so did the end of the Paisley shawl trade mark its decline. But the seventy years during which Paisley produced shawls contain a story of absorbing interest.

The earliest attempt to copy the Kashmir shawl was made in Paisley around the year 1800 by a Mr. Paterson. France and the weaving towns of Norwich and Edinburgh had already tried it; but it remained for Paisley to mechanize successfully the production of these shawls. Due to its experience in weaving fine lawns and damask, Paisley had already made a start in the direction necessary to copy the Indian designs; but even the technique of damask weaving, it was soon found, was inadequate for the task. The Kashmir designs were too complex; too many colors had to be combined; the materials with which Paisley weavers had to work were perhaps unsympathetic.

At first the Paisley shawls were quite dissimilar from the originals which were imported from the Vale of Kashmir. The draw-loom of that era could not execute the elaborate designs, and the largest demand was for smaller shawls with stress on pale colors. So the early examples of Paisley weaving were made of silk; they were either square shawls in which the borders surrounded a center either plain or sprigged with a small object known as a spade, or long shawls with a deep border of Indian design at each end of a plain center and with a narrower border all around. Both were copied from Kashmir models, mainly with white, buff or red centers, for black did not become a fashion until nearly 1820. The resemblance to the originals was mainly that of type rather than exact duplication. The cone motif, which later became the dominant theme, was not then adopted.

But the local sources for design inspiration did not appeal to the creators of the Paisley shawls; they found little of suggestion in the sculptured crosses, memorials, and church buildings from which they could develop shawl patterns. So they turned to the few Kashmir and Persian examples of shawl



How to Use the Viewer

This simple device is die-cut into a few basic shapes. Detach the viewer from this page, and place the cut-outs over the different Paisley motifs. By trying various combinations, you will be able to gain a good visualization of how each individual motif or element may best be adapted to your design requirements.







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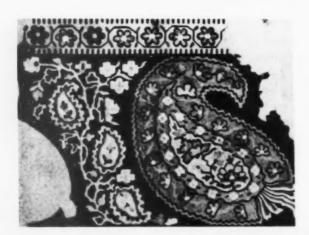
Paisley . . . Creative Answer (continued)

weaving for their inspiration, and from that point onward the Paisley shawl began to make true progress. The cone, as an instance, bore a strong connotation in Indian mysticism; this symbol was interpreted by Paisley's weavers in a form distinct from the original but nonetheless beautiful. It was developed into elongated, fantastic scrolls, beautifully proportioned and interlaced with wonderful colorings. This treatment suited Western tastes and fashion requirements, and the result was a traditional style of ornament which came to be known universally as the Paisley Pine.

The shawls of Kashmir were made, and are still made, on the draw-loom. Strangely enough, in the town of Paisley the weavers invented their own draw-loom along strikingly similar lines without ever having had direct access to the Indian original of the machine. The first models wove a small square spot repeated over the surface of the cloth but independent of it; the warp threads were linked up with a number of cords, and when the cords were drawn and the spot threads raised, the weft was inserted to form the spots. As the weavers gained experience with this technique, which was called harness weaving, they gradually increased the area and the shape of the spots until, finally, floral designs made their appearance.

Elsewhere in Scotland there was developing another loom which wove a floral pattern covering the entire ground. This process was called damask, supposedly because the first examples of this type of weaving came from Damascus. Linen was used then, as now. The simplest form of damask weaving is seen in tablecloths; the figure is the west, the background is the warp; and this is the type of work done by the draw-loom.

When a weaver began to work on a shawl, the pattern appeared on the bottom side only, facing the floor, and the upper side held all the loose, floating yarn which was no part of the design. He rarely saw the finished design until at the very



end of the weaving process he cut out his first plaid, or length. The unused weft floating on the back was trimmed by clippers.

An intermediary step which took Paisley further forward in the making of its famed shawls was the development of a thread industry within the community. The experience gained in spinning thread of silk, wool, linen and cotton for use in such varied products as gauze and napery was put to excellent use by the shawl weavers.

Paisley set about overcoming each of its problems with speed and determination. The invention of the Jacquard loom was of great assistance, and so was the development of the *French* thread which spun wool yarn around a silk core; but although both inventions came from France, it was in Paisley that they were best put to use in manufacturing shawls.

The Shawl and the Loom

The Jacquard loom made the first really notable technical improvement in the shawl industry of Paisley. Although the loom was invented in 1801, and the first Jacquard loom was introduced into England in 1820, it took another twenty years before it found its way to Paisley, and not until 1850 did its use become general. This may seem slow progress, but it must be remembered that these looms were expensive, and that the individual weaver had to raise enough money to buy or rent one.

With the Jacquard loom, and the ten-box lay which had been developed during the interim, the weavers turned their full attention to copying the complex patterns of the Kashmir shawls; and they did it well. Practically any design could be woven; the thread spinners of Paisley had learned how to produce silk, wool and cotton threads fine enough for the most delicate work; and from the middle of the 19th Century Paisley's shawls became more and more elaborate in design. With an eye to women's fashions, the long shawl was extended in size to cover the popular crinoline, and became known as a plaid.

The long shawls became even more popular when Queen Victoria purchased several; actually, the square shawl was eliminated from the fashion picture and the long shawl retained its supremacy until plaids went entirely out of favor. As weavers became more proficient in the use of their Jacquard looms, there grew a tendency to make the patterns more and more elaborate, until at one time Paisley shawl designs reflected a stiffness never found in the Kashmir originals. All over the Western world, however, the Paisley shawl became famous with women; this was particularly true of the white-centered style with delicately colored borders of simple pines, which was woven in cashmere and became part of the trousseau of every well-to-do bride.

The Factor of Cost

It was inevitable that the masses should wish to own and wear what the rich and the noble flaunted. But, even though the Paisley woven shawl was substantially lower in price than the Kashmir original . . . even though a Paisley shawl could be produced in a week whereas the Indian version required the equivalent of three years' labor . . . it was still beyond the reach of the masses of England, Europe and the United States.

It was the town of Paisley which found a way to bridge the chasm, and bring Paisley beauty to a more popular price level. The solution lay in printing the Indian designs on cloth instead of achieving the effect through weaving and embroidering. What they accomplished through printing was to duplicate the idea or feeling of the Kashmir shawl; they could not, in a printed cloth, duplicate the rich weight and utilitarian aspect. Qualities varied to meet varying purses; some printing was done on silk, some on the fine wool or silk gauze for which Paisley's weavers were famous, and the most expensive of the printed shawls were made of cashmere. They were suitable for summer or evening wear, but hardly served the purpose of a winter covering as

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Paisley . . . Creative Answer (continued)

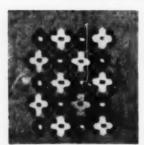
did the harness plaids. They were priced at about one-tenth of the cost of the woven shawls, but they lasted only about onetenth as long because they were so delicate and fragile.

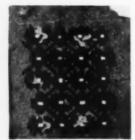
As is universally true of fashions, the Paisley shawl began to decline from its peak even before it had reached the apex. At the point in its ascendency where it began to be manufactured for the masses, even though momentum was still carrying it upward, the Paisley shawl started to lose favor among the women who had first made it an important fashion. Once the town of Paisley began to make a cheaper version in printed form, the high priced woven types were doomed. At the same time the introduction of woven shawls made of low priced cotton accelerated the fashion decline of the entire idea.

Unaware at that time of the economic as well as psychological pattern pursued by a fashion article, the weavers of Paisley sought desperately for a means of bringing down even further the cost of manufacturing a shawl; they believed that if they could find a way to make a shawl long enough to fulfill the utilitarian purpose of outerwear, but reduce the yardage and the labor, the Paisley shawl could be kept alive. A Mr. Cunningham of Paisley invented a process by which the pattern

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FLOWER and GEOMETRIC





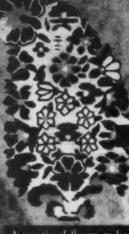
It was inevitable that many geometrics should develop from the flower motifs which were so widely used by designers in contrasting Paisley patterns.



A combination of flowers and geometrics is especially adapted for borders.



Flower symbols and naturalistic renderings are used to form two symbolic pine motifs which flank the center design.



A mosaic of flower and geometric motifs within the traditional outline of the Pine.





Have you tried out the viewer attached to a previous page in this section? A single motif or combination of motifs may serve to stimulate a whole series of ideas on the Paisley them. The crude cut-out shapes of the shirt and skirt above are from the montage of five elementary Paisley patterns shown on the opposite page.



Paisley . . . Creative Answer (continued)

could be woven on both sides without loose threads, thus reducing the necessary cloth by fifty percent as well as substantially cutting down the amount of labor. He held back his secret jealously, awaiting overtures from other weavers for a licensing arrangement, but while he dawdled other weavers hit on a similar process and swiftly marketed their new type of shawl.

It was of little avail, because it turned out that women the world over are very much the same in their attitude to fashion; they want it most when it is least to be had, and the minute it became possible for the charwoman to possess a Paisley shawl . . . whether woven or printed, whether of cashmere or of cotton . . . the lady of the manse no longer cared to be seen wearing her own.

Thus vanished the shawl industry of Paisley. A few shawls were made right up to 1878-1880, mostly black cashmere centers with a harness border sewed on all around; and one or two looms were still being employed to produce inexpensive reversible-type shawls for export to America. The last harness

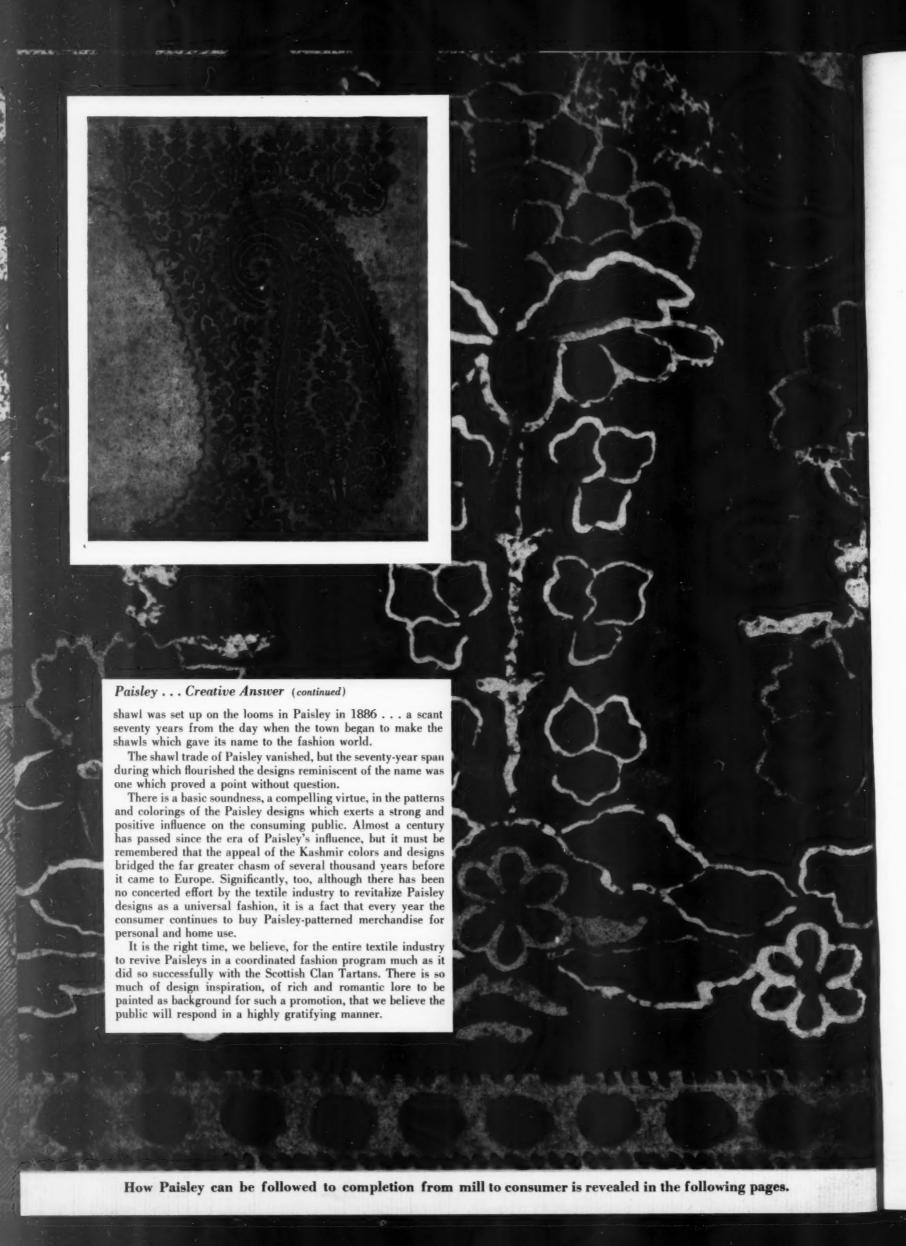








The appeal of Paisley logically extends to a wide variety of products.



LALLA

A POETESS OF ANCIENT KASHMIR

Kashmir, with its famed embroideries and traditional weaving, was also fertile soil for the practice of other arts, poetry among them; and Lalla is Kashmir's most famed poetess. Although she lived two hundred years before Shakespeare was born, her poems are still today the current coin of speech and quotation, touching the ear as well as the heart.

Taking her metaphor in this poem from the weaver's art, surely very familiar to all Kashmiri women, Lalla describes the journey of the soul to true knowledge . . .

I, Lalla, first as a cotton bloom
 Blithely set forth on the path of life.

 Next came the knocks of the cleaner's room
 And the hard blows of the carder's wife.

Gossamer from me a woman spun, Turning me about upon her wheel; Then on the loom was I left undone, While the kicks of the weaver I did feel.

Cloth now become, on the washing stone, Washermen beat me to their content; Whitened me with earths, and skin and bone They cleaned with soaps to my wonderment.

Tailors then with scissors worked on me,
Cut me and finished me, piece by piece;
Garment at last, as a soul set free,
Found I the Self and attained release.

Hard is the way of the Soul on earth
Ere it may reach the journey's end.
Hard is the path of life in each Birth,
Ere thou cans't take the hand of the Friend.





PAISLEYS... Elysian Field for Textile Designers

In many cases the textile designer's enthusiastic approach to the application of a creative theme is proscribed by either the limitations of the possible end uses or the fabric group in which it can be effectively proposed. In the case of Paisleys, the designer is led to Elysian fields and given free play to use his imaginative and technological abilities to the fullest, without boundary or border to limit his urge for expression. The ability to transfer Paisley designs and motifs to virtually every type of fabric has

been demonstrated for thousands of years. The Kashmir workers wove their intricate and exquisite designs on silk, wool and cotton; the printers of Paisley translated their variations to silk, wool, cotton and linen. Besides these fabrics, modern textile designers now have the broad range of man's creations at their fingertips . . . the rayons, the acrylics, the acetates and nylons and the blends . . . each accepted by the consuming public, each suited to the application of printed design and coloring.

Equally unlimited is the field of end use products in which the Paisley designs can run free and untrammeled. It would be a serious defect in fundamental thinking to consider Paisleys entirely, or even mainly, as a fashion theme for apparel alone. While the historic and emotional force of Paisleys can be channeled to find open expression in these fields, the same elements can be used to promote the selling of many products for the home and office. The sprightliness of Paisley would be a welcome change for a child's room; breakfast cloths and napkins in Paisley designs would be a refreshing novelty; draperies and bedspreads for a young girl's room; slipcovers for a man's den . . . these but hint at the profuse possibilities at the textile designer's fingertips.

On the next pages we pursue some of these possibilities, and present additional Paisley background material which may be of inspirational value to those responsible for maintaining textile design at the level of CREATIVE THINKING.



Paisley decorator's fabric of antique satin by Arthur Brill of Golding Decorative Fabrics who utilizes the same design on sheer Bemberg shot with Lurex thread, for casement curtains * The hands hold a Paisley wallpaper by Ben Piasza.



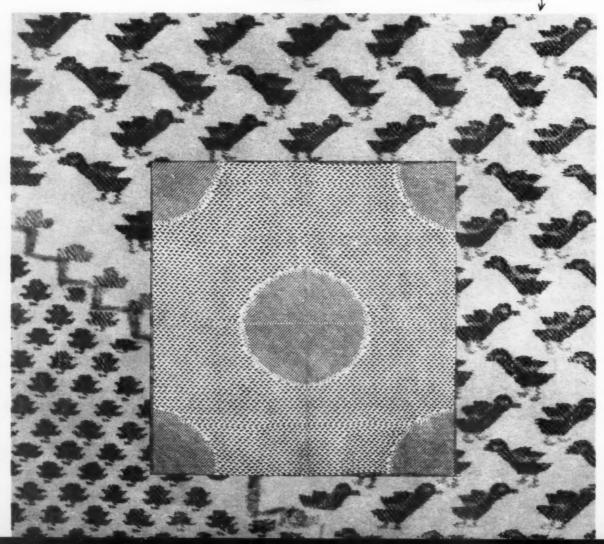


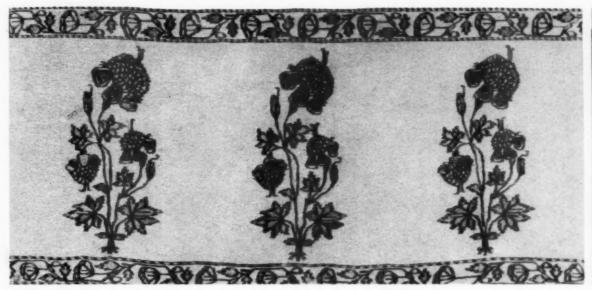
Designers will find in Paisleys a limitless fount of Inspiration.



The designs from original Kashmir shawls, shown on this and succeeding pages (unless otherwise indicated), are through the courtesy of the Museum of Fine Arts in Boston.

Woven Kashmir shawl, 18th or 19th Century; dark blue birds with red feet and accents. The detail is shown in actual size.

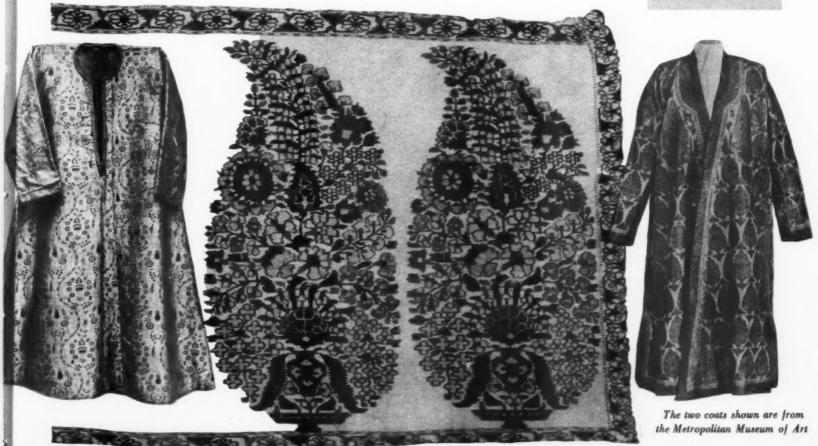






DESIGNER'S INSPIRATION. Carolyn Schnurer, the American designer, recently went on a trip to India. In her wanderings about that vast sub-continent, she saw and chose the plant motif reproduced on this page. Adapting it but slightly, she used it to create one of the outstanding designs of the season. The original motif appears on Kashmiri Pashmina and on other types of shawls. The Carolyn Schnurer design is used in a cotton print.





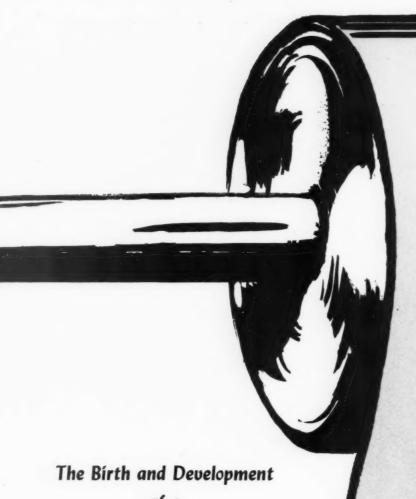




The Birth and Development of a Paisley

FROM THE ORIGINAL CONCEPT TO THE FINISHED FABRIC, A MILL WORKS THROUGH AN INCREDIBLE NUMBER OF STAGES WHICH REQUIRE UNDERSTANDING OF FASHION, TASTE, TECHNICAL SKILL AND MERCHANDISING ABILITY. . . . PLEASE TURN PAGE.





of a Paisley If the manufacture of a certain-to-sell principal in the second second

If the manufacture of a certain-to-sell print were as simple as making an attractive drawing, or going through the stages of imprinting the design on a piece of cloth, the textile industry would show a phenomenal record of successes. But in printed fabrics, as in every other major phase of business, success is the culmination of sound thinking projected through many carefully watched steps.

The anticipated consumer acceptance of Paisleys next season will come not simply because a large number of important textile companies decided simultaneously to promote Paisleys, or because most manufacturers and retailers of soft goods will simultaneously promote Paisleys. Success will come because far beneath the visible surface . . . and far behind the retail counter . . . much good thinking, much taste, much arduous effort and technical knowledge have been applied, first, to the determination of a sellable design theme, and then to its proper execution.

A fuller understanding of why Paisley was so universally selected as the industry-wide theme for Fall 1951, and how the various mills approached and executed the task of creating individual interpretations, can be gained from this case history; it traces the evolution of a Paisley, in the case of Goodman and Theise, from concept to delivery.



1 PRIMARY RESEARCH. Ernest Goodman and Ben Theise conduct research into the Kashmiri designs, introduced later to the Western world as Paisleys. Convinced that the fashion-minded public is ready for this family of designs, they set out to convey the Paisleys in form for consumer requirements.



DETERMINATION OF END USES. Together with V.P. Abe Wolfberg, they determine the application of the numerous Paisley designs to different types of cloth. They consider the number of colors to be used, the variations to be produced, always bearing in mind the needs of the manufacturer.



A FINAL DESIGN IS APPROVED. This is a typical design from the Paisley group appraised in terms of eye appeal and technological problems at the plant. From this point on, the manifold steps through which, the original design takes form in a printed fabric call for the most efficient modern equipment.



4 REDRAWING THE DESIGN. At the plant the original design is redrawn into a series of drawings, each representing one color of the final print. Since each color is separately imprinted on the cloth, it is necessary to engrave on the individual roller only that portion of the design for a given color.



5 MAKING THE REPEAT PATTERN. Since the rollers do continuous printing, it is necessary to engrave the roller so that as it strikes the cloth it will space the pattern impressions in a planned arrangement; this requires calculation to dimensions which are expressed in thousandths of an inch.



PUTTING THE DESIGN ON ROLLERS. The repeat design, which covers exactly the circumference of the rollers, is first photo-engraved to a flat metal plate; by an ingenious pantograph arrangement it is redrawn onto the surface of the slowly revolving copper roller. This is repeated for each color.



FINISHING THE ROLLER. Since the tiniest speck of copper or dirt on the surface of the roller would result in a distortion of the print, craftsmen finish the surface for perfect uniformity and smoothness. The roller goes through processes similar to those used in photo-engraving of magazine printing plates.



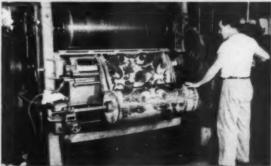
B MEANTIME THE CLOTH IS PREPARED. The grey goods is bleached, scoured and dried; then it enters the dye room to be given its first application of color. If the ground color is to be solid, direct dyeing is done; if portions of the design call for white areas, then discharge printing is done.



9 THE DYE COLORS ARE MIXED. A chemist starts with a study of the design and the cloth; he fixes a formula for each dye representing one design color, makes sample dye tests on swatches; when he is satisfied he sends the formula to a room where large buckets of each required dye color are prepared.



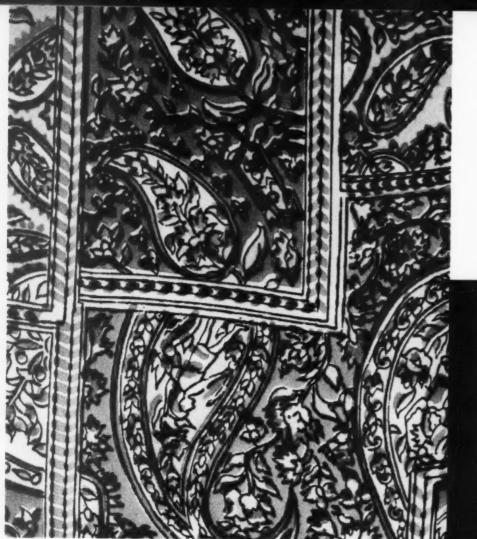
10 PUTTING THE DYE INTO THE PRINT MACHINE. Similar to the working of a printing press, each dye is poured into a fountain or trough. As the respective rollers revolve, they dip into the fountain enough to take on a thin surface coating of dye and pass it on to the fabric which is running through the machine.

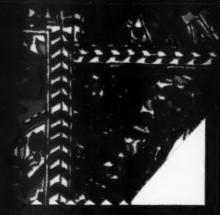


THE FABRIC IS PRINTED. At the end of the long machine, the fabric comes out with all the colors imprinted on it. Impurities are boiled off; the fabric is tentered to a uniform width, treated with a finishing liquid to impart the desired hand, then calendered for surface texture.

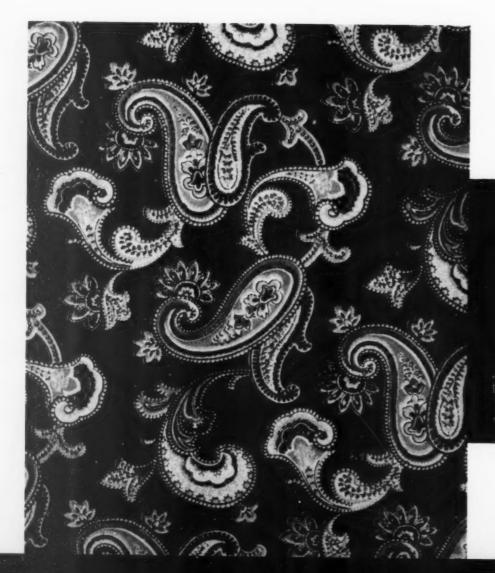


Paisley swatch courtesy of Goodman and Theise





Paisley silk by AMERICAN SILK MILLS





Paisley voile by TEXTILE LOOMS









Paisley sheer by BURLINGTON MILLS

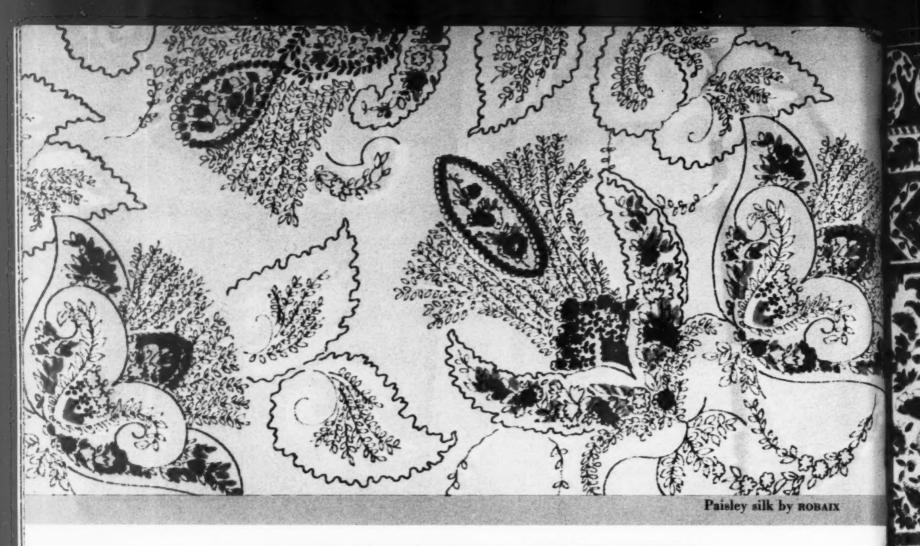




As one sees the collections of the leading mills which have taken up the theme of Paisleys, one must be impressed with the artistry with which they have used this ancient art form to reach new heights in creative design. While all of the essential force of the motifs has been retained, the ingenuity of variation and the imaginative scope in their application are worthy of the highest commendation. The textile manufacturers have, in fact, created so distinctly different and notable a contribution that they may well present these designs as AMERICAN PAISLEYS.



Paisley sheer by BURLINGTON MILLS

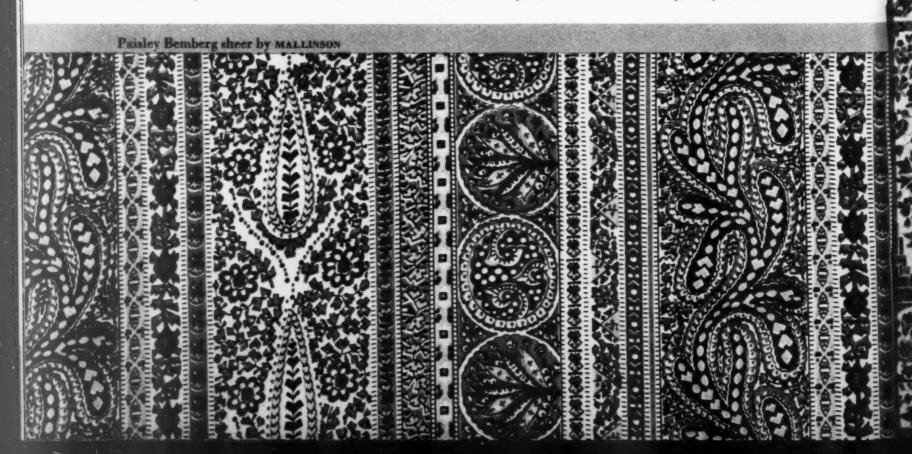


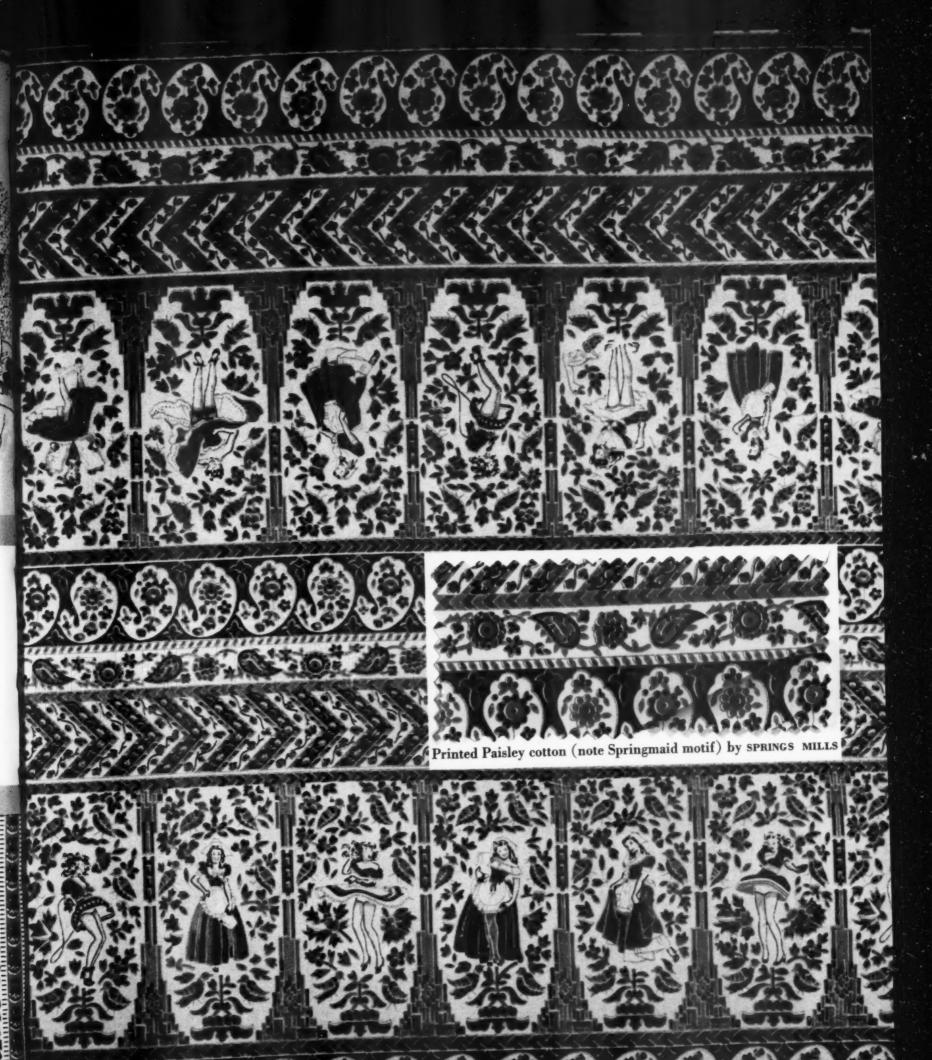
A PRIME OPPORTUNITY for TEXTILE PRINTERS

The high level of fabric art which typifies the apparel and home furnishings of the American mass consuming public is tribute enough to the attainments of the printers and finishers of the textile industry. In no other country is the mass market so well provided with well reproduced designs; no other country has been able to build a mass-production machine akin to that of America, nor does there exist elsewhere the foundation of effective printing and finishing on a like scale. The skill and ingenuity of American printers can be dramatically demonstrated in the execution of the Paisley patterns. Some designs call for subtle nuances, others for broad and

brash color; there is indigenous to Paisleys a constant counterplay of bold mass and infinitesimal detail; patterns can be reproduced on every known type of fiber and weave. To the textile printer there is presented an opportunity to place on the cutter's tables of diverse industries a profusion of Paisleys in exquisite taste and of extraordinary variety.

No form of art is easy to execute; in the Paisley theme group, where intricacy and fine detail prevail, the reproductions call for skill, patience and conscientious performance. And yet Paisleys represent not so much a challenge as an opportunity to prove the excellence and adaptability of our industries.



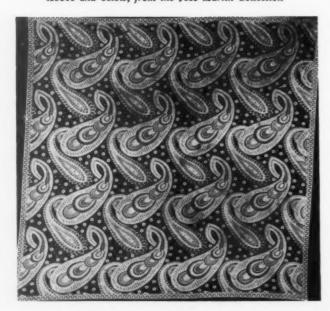




Paisley . . . the Answer to Creative Starvation



Above and below, from the José Martin Collection



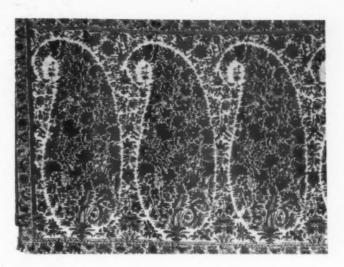


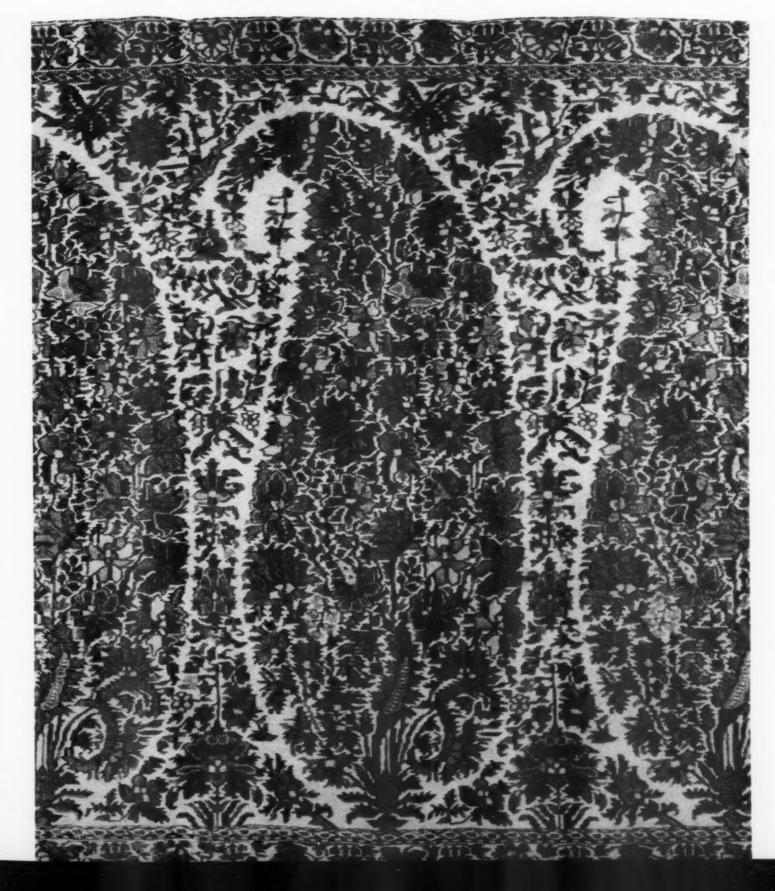
† From the Metropolitan Museum of Art Collection



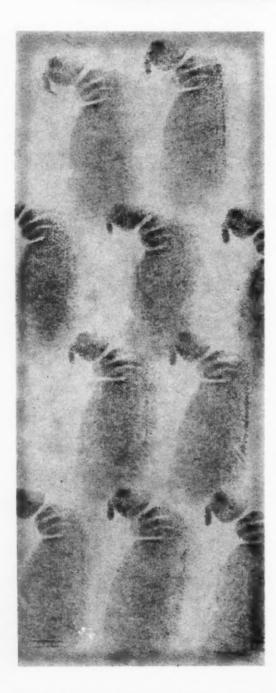
The basic soundness of Paisley design passes the critical tests of ENLARGEMENT and REDUCTION

The perfection of the original Paisley designs is such that, no matter to what proportion they are enlarged or reduced, they lose not a whit of their delicately balanced line or form. On this page we reproduce a random example in its actual size, and then (below) show it enlarged four times. You will observe that despite the exaggeration, the elements retain their clarity and appealing flow, which indicates that both textile and apparel designers may feel free to create styles calling for Paisley patterns which deviate in size to opposite extremes. The border shown is taken from an 18th or 19th Century cashmere shawl.





THE FIRST PRINTING BLOCK. It may be that the first commercial weaver, desirous of identifying his goods, thrust the side of his clenched fist into a dye pot and then impressed his mark on the cloth. From this practice may well have come the phrase "... whereunto I set my hand ..." so commonly found in ancient contracts. By progressive stages the single imprint led to repeat imprints through the use of carved wood or metal stamping blocks, and finally to the creation of the worldwide printing industry with all its diversity of techniques as we know it today.





The marked similarity between the closed-hand imprint and the familiar cone motif of many Paisley designs suggests a simple experiment which fabric designers can use. Using an ordinary stamp pad, first mark the side of your clenched fist with ink, and then press it to a piece of cloth. By making this impression repeatedly and in different arrangements, you will have before you a rough but adequate visualization of a Paisley design without going to either expense or effort.

The photograph above illustrates an original block in a beautiful Indian pine which is one of the patterns used in the shawls made in the time of Queen Victoria's Diamond Jubilee. (Notice the similarity of the pine to the clenched fist mark shown in the illustration alongside.) This block today is worth well over £100 and is in the possession of Mr. Hugh Parsons of England. It is no longer allowed to be reproduced, and the block itself is considered a heritage of the printmaker's art.

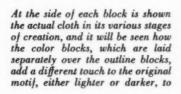


SILK PRINTERS USED FROM 6 TO 8 BLOCKS

to reproduce a Paisley Pattern

In 1701, in order to nurture England's young silk industry, it was decreed that the import of woven silks from Persia, India and China must cease. From this time on, the great block printing craft in England thrived, and the hand-block printer became a force by 1820. Block cutters created their designs on wood or copper-faced blocks; and since each design required from six to eight blocks (one for each color) it is easy to understand that

the cost was high even for that time. On this page is reproduced a set of old hand blocks, together with the actual cloth in the corresponding stage of printing. The first block, always done in metal, shows the outline; the next blocks, known as pegs, fill in the individual colors in the design; and the last block, called a bloch, supplies the color ground over the white fabric which is most generally used.







build up the whole design.
The craft of making the old Paisley hand printed designs is practically extinct; the few surviving Paisley blocks, owned by printing houses and manufacturers, are unique and cannot be replaced.









Paisley . . . Creative Answer (continued) Designs and colorings based on the Paisley motif offer interesting opportunity for imaginative and technical application.



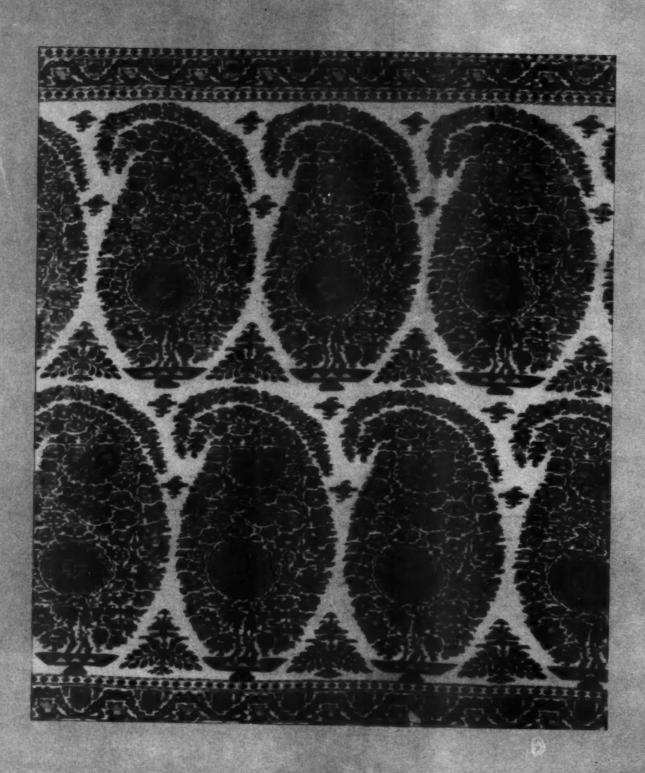




NO ASSIGNMENT FOR LAZY DESIGNERS

With all of its inherent beauty, color and grace, Paisley is still a challenge to the designer's ability and imaginative power. Perhaps it is just because it embodies so many attractive characteristics that the designer must select, adapt and project with the utmost of judgment lest the pattern overshadow the garment or, at best; reflect a static and too-literal mind. The ultimate in Paisley possibilities will reveal itself in the way the adroit designer sketches garments in which the spirit of the Paisley is attuned to the lines of the merchandise itself.





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AMERICAN FAMILES PARTLET PRESENTATION
THE END OF PART I



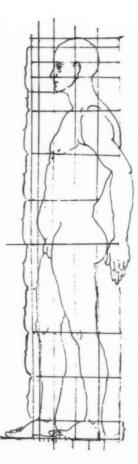
MAN

HIS LIMITATIONS AND HIS POSSIBILITIES

MAN, ON ONE SCALE, IS SO SMALL A CREATURE THAT HE CAN SCARCELY BE SAID TO EXIST. MEN OF SCIENCE BECOME MORE AWARE OF THIS AS THE VAST AND EXPANDING UNIVERSE BECOMES DEFINED, MEASURED AND KNOWN. AND, ON ANOTHER SCALE, SCIENCE HAS ALSO DISCOVERED THAT MAN IS A VAST COSMOS IN HIS OWN RIGHT. FOR THE MINUTE BEINGS, LIVING CELLS AND ORGANISMS WHICH INHABIT HIS OWN BODY, HE IS LITERALLY THE WHOLE WORLD, AND HIS LIFE IS ETERNITY.

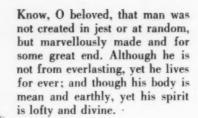
THE AVERAGE MAN DOES NOT THINK OF HIMSELF FROM EITHER POINT OF VIEW, NOR DOES HE REALIZE HIS OWN LIMITATIONS OR HIS OWN POTENTIALITIES. SO FAR HAVE WE DEPARTED FROM BOTH ANCIENT AND MODERN TEACHINGS, THAT THE PHRASE KNOW THYSELF HAS CEASED, FOR THE MAJORITY, TO BE AN OBJECTIVE GOAL . . . ON THE FOLLOWING PAGES WE TOUCH ON SUBJECTS WHICH HAVE DEEPLY OCCUPIED SOME OF THE WORLD'S GREATEST THINKERS. THE PASSAGES SELECTED FROM BOTH MODERN AND ANCIENT PHILOSOPHIES ILLUSTRATE MAN'S LIMITATIONS AND MAN'S POSSIBILITIES.

I myself also am a mortal man, like to all, and the offspring of him that was first made of the earth. When I was born, I drew in the common air, and fell upon the common earth, which is of like nature, and the first voice I uttered was crying, as all others do. For there is no king that had any other beginning of birth. For all men have one entrance into life and the like going out. Wherefore I prayed and understanding was given me; I called upon God and the spirit of wisdom came to me. I preferred her before sceptres and thrones, and esteemed riches nothing in comparison of her. For wisdom is the breath of the power of God, and a pure influence flowing from the glory of the Almighty; and therefore can no defiled thing fall into her. For she is the brightness of the everlasting light, the unspotted mirror of the power of God, and the image of His goodness. She is more beautiful than the sun, and above all the order of the stars; being compared with the light, she is found before it.





MAN'S POSITION



Man has been truly termed a "microcosm," or little world in himself. The structure of his body should be studied not only by those who wish to become doctors, but by those who wish to attain to a more intimate knowledge of God, just as close study of the niceties and shades of language in a great poem reveals to us more and more of the genius of its author.

The true greatness of man lies in his capacity for eternal progress, otherwise in this temporal sphere he is the weakest of all things, being subject to hunger, thirst, heat, cold and sorrow. Those things he takes most delight in are often the most injurious to him, and those things which benefit him are not to be obtained without toil and trouble. As to his intellect, a slight disarrangement of matter in his brain is sufficient to destroy or madden him; as to his power, the sting of a wasp is sufficient to rob him of ease and sleep; as to his temper, he is upset by the loss of a sixpence; as to his beauty, he is little more than nauseous matter covered with a fair skin; without frequent washing he becomes utterly repulsive and disgraceful.

In truth, man in this world is extremely weak and contemptible; it is only if he rises from the rank of beasts to that of angels that he will be of value.

FROM THE ALCHEMY OF HAPPINESS BY AL GHAZZALI C. 1100 In every age man has been confronted with the question: "What is the aim of existence on earth?" Different aspects of this problem have occupied his thoughts for thousands of years and most of our religions and philosophies arose in response to this question. The best and the wisest of the human race have searched and labored to bring to the rest of us a knowledge which might help. Some of the results of these labors are presented in these pages. They touch on various aspects of man's existence on earth and in one form or another give clues to the direction in which he can go to find ultimate meaning and purpose.

Here is man, ignorant of himself . . . he knows not how to estimate his Creator, because he knows not how to value his own creation. If we consider Man's Make and Composition, the several stories of his structure . . . their Order, Function and Dependency; the Instruments of Food, the Vessels of Digestion, the several Transmutations through which it passes, and how Nourishment is carried and diffused through the whole body . . . I say, if this rare Fabrik alone were considered by us, then surely Man would have a more reverent sense of the Wisdom and Goodness of God and the Duty he owes to Him. But Man is a strange contradiction even to himself. He would have others obey him, even his own kind; but he will not obey God, who is so much above him . . . he is angry with his servants and strict with his neighbors, he revenges all affronts to extremity; but, alas, forgets all the while he is only a man . . . and is more in arrears to God who is so very patient with him, than (to those) with whom he is so strict and impatient.

WILLIAM PENN - QUAKER TEACHINGS

There was a certain ferocious snake who lived in a meadow and terrorized all who came near him. One day a holy man chanced by and the snake rushed forward to bite him. But coming near to the saint the snake lost all his ferocity and ended by begging to be taken as a disciple. The holy man admonished the snake to injure nobody and then went his way. From that day on the snake never harmed anyone. But after a while certain people, observing that the snake no longer rushed at or bit anyone, began first to tease him and then to take all sorts of liberties, even to the extent of beating him unmercifully. The snake's life became quite miserable. Fortunately, the saint came back to the meadow one day and, seeing the snake in its pitiable condition, asked him what was the cause. Sorrowfully the snake said, "Well, you asked me not to bite anybody and I followed your advice . . . and now look at me!" The holy man smiled and replied, "I told you not to bite anybody, but I did not say you were not to frighten people away by hissing."

PARAPHRASED FROM SRI RAMAKRISHNA



Negative emotions are a terrible phenomenon. They occupy an enormous place in our life. Of many people it is possible to say that their lives are regulated and controlled, and in the end ruined, by negative emotions; at the same time, they do not play any useful part in our lives. They do not help our orientation, they do not give us any knowledge, they do not guide us in any sensible manner. On the contrary they spoil our pleasures, they make life a burden to us and they very effectively prevent our possible development.

FROM THE PSYCHOLOGY OF MAN'S POSSIBLE



LEVELS

We are all aware of different levels in the ordinary things of life around us. We can understand the idea that a flower exists at a higher level than a stone . . . that brandy may be at a different level from beer . . . that a Rembrandt painting is on a higher level than a newspaper comic . . . that a prison, a market-place and a church are on quite different levels. In the same way many people are able to observe the existence of different levels within themselves. There is a level within man which enables him to understand and ponder on the fact that we exist in the universe in which all things are connected by a strange and wonderful plan or order . . . and still other levels that respond to a cloak-room story or to a casual radio program.

It has been said that almost every man has been a criminal, an idiot or a saint at different moments in his life-time. For centuries all religions, all philosophies have pointed out this idea: that man contains many possibilities within himself. Yet how rarely do we think about ourselves in this way? How infrequently do we do those things which would help us reach higher points within us? Rightly understood and applied, this idea can help man to move in the direction of these higher levels within himself . . . to comprehend and to know Truth which too often escapes him.

 ${\mathcal M}$ an is a ladder placed on earth and the top of it touches Heaven; and all his movements, doings and words leave traces in the upper worlds. What is meant by the words in the Scriptures: the angels have their virtues and flaws, and man has his virtues and flaws? The virtue of angels is that they cannot deteriorate, and their flaw is that they cannot improve. Man's flaw is that he can deteriorate and his virtue is that he can improve . . . Ceaselessly man moves from rung to rung . . . Preparation is the task of man who is caught in the thicket of tremendous obstacles and must free himself.

In the study of the many parables used by Christ in His description of the higher level of development called the Kingdom of Heaven, let us take the phrase: "The Kingdom of Heaven is within you," and try to understand the word within. The Kingdom of Heaven is the highest state of evolution attainable by Man. To reach a new state of himself a man must change internally. He must become a New Man. A state is internal. The Kingdom of Heaven is internal. It is a state that can be reached by a man internally, through inner change. What a man must observe in himself, in what way he must think, what he must begin to value and aim at and so on, are constantly being taught by Christ as the means of inner evolution, up to that higher level called The Kingdom of Heaven. The higher level is within a man. Whether we say higher or more internal is the same thing, provided we understand that a higher state of a man exists potentially within him, just as does a more internal state. A man can be better than he is. This better state is inner or higher in regard to his present state. The Kingdom of Heaven, the highest state of a man, is thus internal to a man . . . that is, within the man he is; or it is at a higher level . . . that is, above the man he is. To evolve, a man must move inwardly.

MAURICE NICOLL - THE NEW MAN



And Jacob went out from Beer-sheba . . . And he lighted upon a certain place, and tarried there all night, because the sun was set; and he took of the stones of that place, and put them for his pillows, and lay down in that place to sleep.

And he dreamed, and behold, a ladder set up on the earth, and the top of it reached to heaven; and behold, the angels of God ascending and descending on it.

THIS STORY, WHICH HAS CAPTURED MAN'S IMAGINATION EVER SINCE IT WAS WHITTEN, IS SAID TO REPRESENT THE IDEA OF DIFFER-ENT LEVELS ... THE POSSIBILITY OF ASCENT FROM LOWEST TO HIGHEST.

"I died as mineral and became a plant, I died as plant and rose to animal, I died as animal and I was man. Why should I fear? When was I less by dying? Yet once more I shall die as man, to soar with angels blest; but even From angelhood I must pass on: all except God doth perish



PRAYER

If you could once make up your mind never to undertake more work mind never to undertake more work of any sort than you can carry on calmly, quietly, without hurry or flurry, and the instant you feel yourself growing nervous and like one out of breath, would stop and take breath, you would find this simple common-sense rule doing for you what no prayers or tears could ever accomplish.

I have quitted all forms of devo-I have quitted all forms of devo-tion and set prayers, and I make it my business only to persevere in His Holy presence, wherein I keep myself by a simple attention and a general fond regard to God, or to speak better, an habitual, silent and secret conversation of the soul with

BROTHER LAWRENCE

This pearl of eternity is the church or temple of God within thee, the consecrated place of divine wor-ship, where alone thou canst worship God in spirit and in truth. When once thou art well grounded in this inward worship, thou wilt have learned to live unto God above time and place.

WILLIAM LAW



Prayer has a special place in the life of man. Almost all races and cultures have practised it but in recent times many people have lost or forgotten the true meaning of prayer. A man will go to church and with his mind occupied by a host of wandering thoughts will repeat a series of prayers or he will use prayer as a method of petitioning a higher power. What can come from this? It is said that "One must learn to pray, just as one must learn everything else." A man, sitting quietly alone in a room, with mind pure and undisturbed . . . aware of his own bodily presence, his surroundings and his relation to the universe in which he lives . . . may be said to be in a state of prayer. Through real prayer he has possibility of coming into contact with higher influences which exist in the universe but which in ordinary states man cannot reach. Prayer in ancient times was considered as a form of pure concentration in which a man thinking seriously of his relations to God would arrive at a point where his thoughts would do for him precisely what he asked God to do for him.

May I be no man's enemy, and may I be the friend of that which is eternal and abides. May I never quarrel with those nearest to me; and if I do, may I be reconciled quickly. May I never devise evil against any man; if any devise evil against me, may I escape uninjured and without the need of hurting him. May I love, seek and attain only that which is good. May I wish for all men's happiness and envy none. May I never rejoice in the illfortune of one who has wronged me . . . When I have done or said what is wrong, may I never wait for the rebuke of others, but always rebuke myself until I make amends . . . May I win no victory that harms either me or my opponent. May I reconcile friends who are wroth with one another. May I, to the extent of my power, give all needful help to my friends and to all who are in want. May I never fail a friend in danger. When visiting those in grief may I be able by gentle and healing words to soften their pain . . . May I respect myself. May I always keep tame that which rages within me. May I accustom myself to be gentle, and never be angry with people because of circumstances. May I never discuss who is wicked and what wicked things he has done, but know good men and follow in their footsteps.

ASCRIBED BY STOBAGUS TO EUSEBIUS 264 A.D.

May our thoughts, words and works continue in righteousness. May the earthly be as the body desires it in righteousness; may the heavenly be as the soul desires it in purity. I wish good for every living thing which the Creator has created, and that the wicked may remain far from life and work. I desire that the wise may be fortunate, the truthful blessed; that the wise may be a ruler, the unwise not a ruler. The water shall flow, the trees grow, the corn ripen. May our thoughts, speech and doings be right and upright. May good deeds increase through prayer and works; may sins become utterly annihilated. May the world be good, the heaven be good, at last may the good purity increase, the souls come to God. So may it come as I wish.

There is a story of a girl crossing a place where a Moslem was praying. Later the girl returned and the man stopped her saying: "Are you an infidel, that you ignore the law, crossing before a person at prayer? What insolence!" "I did not mean any harm," said the girl, "but tell me, what do you mean by praying?" The man answered "For me, prayer is thinking of God." "Oh!" said the girl; "but I was going to see my lover and was thinking of him, and I did not see you. If you were thinking of God, how did you see me?"

TOLD BY HAZRAT INAYAT KHAN

Socrates' religious practice and his formula of prayer were simple; "Give me that which is best for me," for said he, "the Gods know best what good things are . . . to pray for gold or silver or despotic power were no better than to make some particular throw at dice the subject of prayer.

A R T



All art usually has one thing in common . . . it tends to show or reveal. Through the perceptivity and skill of the painter and often to our own surprise, we may see a great deal on canvas that we have missed in activity. A face, a street scene that we pass by a hundred times, comes to life with a strange freshness when it is put on canvas by a sensitive artist. We value the artist for his ability to transmit his own experience to us.

What we do not sufficiently realize is the fact that some people can receive more from a work of art than others ... and that in different times and in different states a man receives more or less from the same work of art.

It is on the capacity of man to receive and to experience another man's expressions of feeling that the activity of art is based. Some of our greatest works of art . . . the cathedrals of the Middle Ages, the Psalms, Gospels and the Genesis in the Bible, spring directly from the expression of those feelings flowing from the relationship of man to God, and the consequent brotherhood and equality of all men.

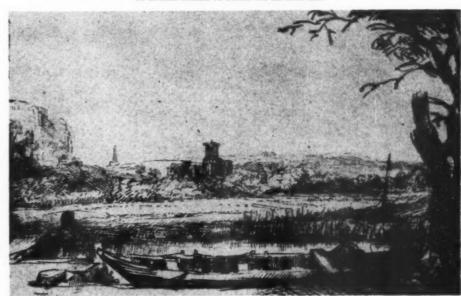
Sometimes people who are together may be estranged in mood and feeling, till perhaps a story, a performance, a picture, or even a building, but oftenest of all music, unites them all as by an electric flash, and in place of their former isolation or even enmity they are all conscious of union and mutual love. Each is glad that another feels what he feels, glad of the communion established not only between him and all those present, but also with all now living who will yet share the same impression, and more than that, he feels united with all men of the past who have been moved by the same feelings and with all men of the future who will yet be touched by them.

FROM WHAT IS ART? BY LEO TOLSTOY





REMBRANDT PERHAPS MORE THAN ANY OTHER ARTIST HAS THE POWER AND CAPACITY TO ENABLE OTHERS TO SHARE HIS EXPERIENCES.



EVEN A DETAIL OF A REMBRANDT LANDSCAPE CAN EVOKE A DIRECT RESPONSE.

THE POWER TO TRANSMIT FEELING IS CLEARLY SHOWN IN THIS DETAIL FROM REMBRANDT'S DESCENT FROM THE CROSS.





THE ANNUNCIATION. SCHOOL OF FRA FILIPPO LIPPI, 15TH CENTURY.

MAN, WAR and PEACE

. . . The first fifteen years of the nineteenth century present the spectacle of an extraordinary movement of millions of men. Men leave their habitual pursuits; rush from one side of Europe to the other; plunder, slaughter one another, triumph and despair; and the whole current of life is transformed and presents a quickened activity, first moving at a growing speed, and then slowly slackening again. What was the cause of that activity, or from what laws did it arise? asks the human intellect.

The historians, in reply to that inquiry, lay before us the sayings and doings of some dozens of men in one of the buildings of the city of Paris, summing up those doings and sayings by one word — revolution. Then they give us a detailed biography of Napoleon, and of certain persons favorably or hostilely disposed to him; talk of the influ-

ence of some of these persons upon others; and then say that this it is to which that activity is due, and these are its laws.

But the human intellect not only refuses to believe in that explanation, but flatly declares that the method of explanation is not a correct one, because in this explanation a smaller phenomenon is taken as the cause of a greater phenomenon. The sum of men's individual wills produced both the revolution and Napoleon; and only the sum of those wills endured them and then destroyed them.

"But whenever there have been wars, there have been great military leaders; whenever there have been revolutions in states, there have been great men," says history. "Whenever there have been great military leaders there have, indeed, been wars," replies the human reason; "but that does not

prove that the generals were the cause of the wars, or that factors leading to warfare can be found in the personal activity of one man."

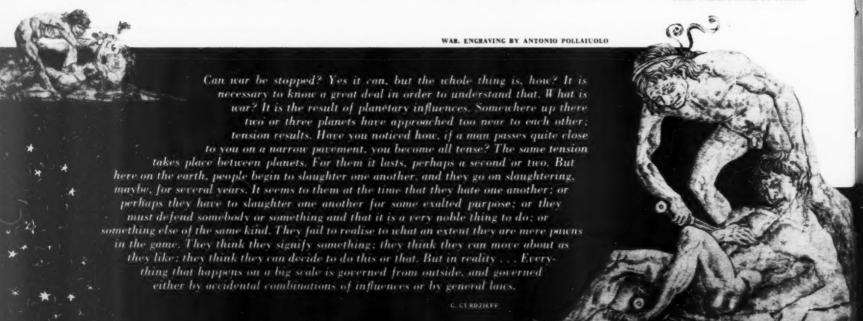
In 1789 there was a ferment in Paris; it grew and spread, and found expression in the movement of peoples from west to east. Several times that movement is made to the east, and comes into collision with a counter-movement from east westwards. In the year 1812 it reaches its furthest limit, Moscow, and then, with a remarkable symmetry, the counter-movement follows from east to west; drawing with it, like the first movement, the peoples of Central Europe. The counter-movement reaches the starting-point of the first movement — Paris — and subsides.

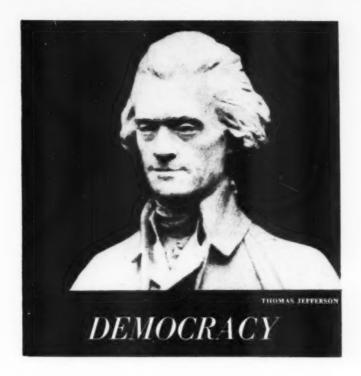
During this period of twenty years an immense number of fields are not tilled; houses are burned; trade changes its direction; millions of men grow poor and grow rich, and change their habitations; and millions of Christians, professing the law of love, murder one another.

What does all this mean? What did all this proceed from? What induced these people to burn houses and to murder their fellow creatures? What were the causes of these events? What force compelled men to act in this fashion? These are the involuntary and most legitimate questions that, in all good faith, humanity puts to itself when it stumbles on memorials and traditions of that past age of restlessness.

To answer these questions the common sense of humanity turns to the science of history, the object of which is the self-knowledge of nations and of humanity . . .

FROM WAR AND PEACE BY TOLSTOY





Man's possible development implies right social and political conditions, personal freedom, an ordered life and a level of culture. Our times are particularly difficult in these respects. In many

countries the right conditions have ceased to exist. History shows that for the past two thousand years the ideal of democracy has offered man the best social and political conditions for self-realization.

Men of Athens, I honour and love you; but I shall obey God rather than you, and while I have life and strength I shall never cease from the practice and teaching of philosophy, exhorting anyone whom I meet after my manner and convincing him, saying: O my friend, why do you, who are a citizen of the great and mighty and wise city of Athens, care so much about laying up the greatest amount of money and honor and reputation, and so little about wisdom and truth and the greatest improvement of the soul, which you never regard or heed at all? Are you not ashamed of this?... For I do nothing but go about persuading you all, old and young alike, not to take thought for your persons or your properties, but first and chiefly to care about the greatest improvement of the soul.

SOCRATES' WORDS IN PLATO

In the winter of the first year of the war, the Athenians, observing an ancient custom, gave a public funeral to those who had fallen in the field. An established feature of the memorial service was a commemorative address called Panegyric, to be pronounced by a speaker chosen by the vote of the nation which this year fell on Pericles. He spoke from a lofty platform erected near the graves . . .

"Our government, which we enjoy, is not one which enviously copies the usages of neighbor states. No, it is so far from imitating them that it actually furnishes them with a model for their imitation. We call it Democracy, because the government is carried on for the benefit, not of the classes but of the masses. As to men's position before the law, with respect to suits between man and man, all stand on an equal footing. But as to political and social rank, that depends on personal excellence in this or that department. A man's advancement is secured, not by class interest, but by individual merit. If one has it in him to do good service to the state, his previous humble position does not tell against him; poverty is no bar. While there is no exclusiveness in our public administration, in the social relations of private citizens

there is no such thing as meddling censoriousness. Each one lives as he likes, and no one presumes to resent it. His neighbors do not meet him with black looks, which to be sure, break no bones, yet make one uncomfortable. And so it is, while we are unconstrained in our private intercourse, in our public life we are kept within the bounds of law by respect for authority. We are careful to obey our magistrates and to observe our laws, especially those enacted for the protection of the injured, as well as those unwritten laws which are enforced by public opinion and whose penalty is the disgrace of the transgressor

Nay more, we have made provision for abundant recreation as a relief from bodily toil and mental strain. I may instance our theatrical competitions and our great sacrificial feasts which recur at intervals throughout the year. I may refer also to the refinement of our home life, and this means a daily pleasure, by which any tendency to depression of spirits is put to rout.

Again the greatness of our state makes her the emporium of the whole world's riches. We gather in the harvest of the choicest products of other lands as freely as if they were grown in our own fields, and enjoy them as securely .

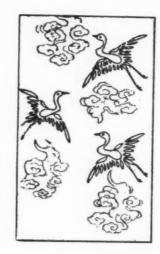
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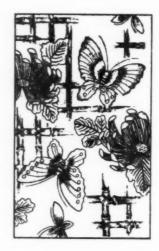


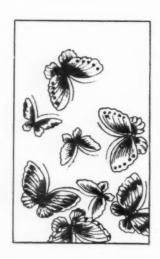
When a man is on the plains he sees the lowly grass and the mighty pine tree and he says, How big is the tree and how small is the grass! But when he ascends the mountain and looks from its high peak onto the plain below, the mighty pine tree and the lowly grass blend into one indistinguishable mass of green verdure. So in the sight of the worldly, there are differences of rank and position . . . one is a king, another is a cobblet; one a father, one a son, and so on. But when the divine sight is opened, all appear as equal and one. and there remains no distinction of good, bad, high or low.

THE WORKS OF SRI RAMAKRISHNA

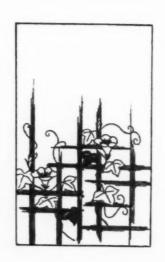






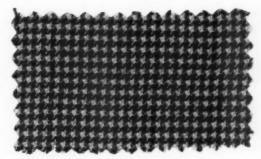








Seven Studies for Design



Washable flannel shirting of all-viscose rayon by Mooresville MILLS

FLANNEL ... EXAMPLE OF A FASHION IN REVERSE

While mass acceptance stems mainly from adoption at the top levels, Flannel cloth started with the Welsh peasant and worked up

THE INHABITANTS OF THE CHILL, rainswept hills of Wales required clothing of extra warmth and protecting qualities. They had the source of raw material in the mountain sheep which roamed plentifully over hill and vale; but while similar peoples stopped when they wove the wool into cloths, the Welsh hit upon the technique of weaving a comparatively light cloth and then napping the surface so that insulatory pockets resulted.

This was the beginning of flannel; in native language it was and is still called *gwlan*. For several hundred years flannel was the only fabric woven in the Wales hills; its light-but-warm texture made it most popular with the hard pressed natives. But ultimately flannel was discovered by a few of the rich. Princess Elizabeth of York and Empress Josephine of France, history records, wore flannel nightshifts despite their access to rich silks; and during the last century flannel became almost the standard fabric for winter underclothes for both rich and poor.

Early Clumsy Construction

What prevented flannel for a long time from becoming a popular fabric in fashionable outerwear was its clumsy construction. However, as the English woolen industry became enriched by the influx of religious refugees from France and the Netherlands during the 16th Century . . . including many skilled weavers who settled in the Southdown and Norfolk regions . . . refinements were added to the gamut of all English textiles, including flannel. Little by little the mills in England learned how to achieve closer weaves, softer finish, lighter and more drapable flannels; and by the beginning of the 19th Century flannel had attained such popularity that the mill of the Schofield brothers in Newburyport, Massachusetts was able to use improved English looms to establish a successful flannel business.

Still the cloth was best known as a secondary rather than primary fabric. It was widely used at all economic levels for underclothes (the introduction of Turkey red in 1829 launched the fashion for red flannel petticoats), and the traditional red lining of the nurse's cape goes back to the red flannel lining in the cape worn by Florence Nightingale in the Crimean War.

Past the middle of the 19th Century we find the first truly important progress of flannel toward fashion status: the Prince of Wales, later King Edward VII, visited this country in 1860. This arbiter of men's fashions created a stir over two novel touches in his wardrobe; one was the bowler hat which he wore at the ultra-fashionable Goodwood Races (a fashion which retained importance for almost half a century) and his flannel suit.

The March of Flannel

Instantly there grew a strong demand among American men for flannel suits, and this in turn led to a strong demand for fabrics which could be well tailored. American mills applied themselves to the problem, and the grey flannel suit grew into a staple of the American male's wardrobe. Meantime, mills began to develop flannel cloths woven of fibers other than wool. They blended cotton with wool; then they learned how to weave and nap cotton alone to obtain the right texture. Today, of course, flannel has become a generic name for a weave rather than a fiber, and we have flannel fabrics woven of virtually every type of fiber produced by man or nature.

As a corollary, the designers and producers of fashion apparel for men, women and children developed not only new styles but new types of garments which suggested themselves as manufacturers became more familiar with these cloths. The entire field of sportswear, as an instance, received impetus from the profusion of excellently designed and colored flannels.

As a general rule a fabric or a style begins to retrograde when the masses pick it up from the upper strata. Flannel, in its centuries-old history, has completely reversed this course; it becomes increasingly desirable from decade to decade.



Windham flannel, 55% wool and 45% cotton, by WAUREGAN MILLS



Worsted and wool flannel of all-virgin wool by JUILLIARD

American Fabrics Forum



LET'S STOP CALLING THEM SYNTHETICS!

Every fiber begins with the raw materials supplied by Nature; why, then, use a term which casts reflection on the modern wonders which textile chemists have produced?

The Editors of AMERICAN FABRICS believe it is high time the billion-dollar industry which creates fabrics and fashion through chemistry be rid of the word *synthetic*.

When the first crude man-made fibers were introduced to the world of commerce, they were called *artificial silk*, then *gros*, and finally *rayon*. As chemistry produced additional wonders we came to know acetate, viscose, nylon, Orlon, fiber V, fiber E, Dynel, Teca, Celanese, Bemberg, Vicara and more. Each fiber represents a direct contribution to the social and economic development of our current world . . . yet all are stigmatized by the appelation *synthetic*.

Thoughtful examination of the processes of Nature lead to certain definite conclusions: (1) Every possible form of raw material is derived from Nature. (2) All life is a process of transmutation from base material to a finer state, of conversion and reconversion of one form of energy into another. Since this is so, then by what standards can man's chemically conceived fibers be termed synthetic?

Every fiber classified as *natural* must begin with the raw materials supplied by Nature; but is this not just as true of rayon or nylon or any other fiber created by man? Are not the chemicals which are combined to manufacture a filament of rayon just as purely *natural* as the carbon-hydrogen-oxygen-nitrogen, etc., etc. composition of natural fibers?

Chemistry the Catalyst

The point at which nature's fibers and man's fibers separate in their manufacturing process is the physical form of the factories which convert the raw materials into finished fibers. Nature uses the silkworm as its blending plant to convert the cellulose of the mulberry leaf into silk; in a similar way, man uses the chemical plant to convert cellulose into rayon.

Both start with the basic *natural* ingredients — cellulose plus the *natural* materials which come from *natural* sources . . . and

both produce fibers which have certain common virtues plus individual characteristics with additional values. Could there be silk without the silkworm to act as mixing vat and catalytic? No more than the chemist could produce rayon without his elaborate equipment.

Therefore it must be conceded that the fibers of nature and the fibers of man are similar in two senses: (1) the use of Nature's ready materials, and (2) the application of chemistry's principles to their conversion. Is it logical, then, to call the one group natural and the other synthetic?

Chardonnet's first experimental efforts to duplicate the workings of the silkworm may have originated from man's pressing curiosity; or it may have reflected an economic significance. The fact remains, however, that the development of rayon to its current status could not have come to pass unless there was an underlying *need* for this fiber and its cousins.

There should be, there *must* be, differentiation in the consumer's mind between the various fibers; but there must *not* be subtly implied derogation such as exists when we talk about rayon as *synthetic* fiber. Each fiber must establish itself for its virtues, and must thereby establish its particular name; this is an individual company problem, and is best left there.

Taking the Syn Out of Synthetics

But the task of removing the word synthetic from the textile vocabulary when discussing man's chemical contribution is one which must be shared by all who manufacture or process or sell these fibers. Some may advocate coining a new word to embrace and describe them; others may argue that the wise course to pursue would be to make no reference to the origin of rayon, nylon or any other of man's fibers . . . but to emphasize each one's virtues.

Until the fiber industry's leaders can jointly produce a suitable name, at least they can agree upon one forward step: Make every effort to eliminate the use of the word *synthetic* in all forms of promotion and selling to the consumer. We, for our part, see neither justice nor correctness in the use of this adjective.





OVERCOATS...IN A CHANGING WORLD

Emotional as well as economic changes often create the need for a change in fashion, and the textile world must be ready with the cloth

The overcoat styles which are classified within the industry today as staples had their origin in circumstances which vary in many respects but have the common bond of functional need. Demonstrating the philosophy that as the world changes in manner or in mood, fabrics must change, we illustrate several instances wherein a new set of conditions created both the opportunity and the necessity for overcoats which are commonly worn today . . . but were novel departures at the time of their conception.

THE POLO COAT. So far as written record reaches, it is believed that the soft, fine underhair of the camel was used to weave warm and luxurious cloths for the Tartar and Mongolian chiefs. Merchants whose caravans traveled through the passes of India to the north brought back lengths of the precious cloth for use by Indian potentates. Many centuries later, when British cavalry officers in India

took up polo to while away their tedious stay, they became acquainted with camel's hair cloth and discovered that it made up into an excellent lightweight yet warm wrap for wear between chukkers or after the strenuous game.

The Polo Coat became almost a uniform for polo players, not only in India but in England, and it was not long before there was established quite a trade for this type of garment. Naturally the American polo set picked up the idea; Tommy Hitchcock wore one at Meadowbrook, his younger brother liked it well enough to have a copy made to wear at Yale... and the Polo Coat was on its way to becoming the fastest selling style in men's overcoats. Worumbo Mills developed a cloth of special qualifications for this type of garment, and even registered the name Polo Cloth for its fabric; a fine job of creating a special fabric to meet this specific need

(continued)



LORD RAGLAN'S DESIGN opposite of Lord Chesterfield's fitted coat



SHELL-LINED COAT
returns in the form of the Station Wagon coat

Beginnings of Some FAMOUS OVERCOAT FASHIONS

THE EAGLAN. Originally the coat tailored for Lord Raglan was a tweed wrap which kept off the foggy chill while its wearer was shooting grouse. What remained of the basic style was the Raglan Shoulder which was a marked departure from the set-in type. It is still a favorite among men who want a more casual look in their overcoats.

THE INVERNESS. This combination coat and cloak, without sleeves, was lined with ailk and was a convenient and comfortable slip-on for wear with evening clothes. It never attained much popularity, even when it was considered de rigeur for men to wear formal clothes after dark; possibly the American male regarded it as somewhat feminine in appearance.

THE SHELL LINED COAT. The original of this style was lined and finished with a collar and cuffs of expensive fur which, together with the bulky outer cloth, acted as a bulwark against the cold while traveling. The advent of newer forms of transportation, and steam heating in all types of buildings, removed the functional necessity for this type of coat. It disappeared for many years, but returned in the form of the Station Wagon Coat when auto travel and suburban living became national in scope. Today's version is far lighter in weight, due to improved technology in weaving non-porous fabrics; the silk frogs have given place to either buttons or slide fasteners; and tweed view with solid weaves for favor.

THE SHORT COVERT COAT. The active sports enthusiast adopted this hip-length coat when he decided to walk short distances instead of riding. This is another fashion which expired for lack of reason-for-being antil the wide development of hunting and fashing in this country suggested its revival and modification. Recent versions, which range in length from hip- to fingertiplength, are also popular on the college campus. Twills and gabardines are the most widely mass fabrics.



THE INVERNESS too elaborate a fashion for today's occasions



SHORT COVERT COAT
prototype of today's fingertip coat for outdoors



THE TRENCH COAT WAS DEVELOPED FROM THE AMERICAN AND BRITISH OFFICERS' COAT OF WORLD WAR I

Overcoats in a Changing World . . . continued

was also done by other mills, notably Stroock.

THE TRENCH COAT. All that remains of the original, completely functional garment from which the name stems is a superficial resemblance. During the first World War the Trench Coat was conceived as a rugged garment to protect the wearer against the sodden, muddy rigor of life in open trenches; it had a shell of tough water-proofed cotton gabardine, a lining of oiled silk and an inner-lining of camel's hair. Officers returned from overseas sported their Trench Coats, and both the manufacturer and consumer were quick to take to its jaunty appearance as well as its construction features. Refinements were made in the types of fabrics, the Trench Coat was greatly lightened in weight, and the linings either disappeared or were considerably reduced. Today the Trench Coat is still an extremely important style in rainwear (women and children

wear it as frequently as do men).

THE DUFFLE COAT. This extremely practical, knee-length and hooded coat was originally created from blanket cloth and worn by Norwegian fishermen as a protection against the icy blasts of the North Sea. The British navy found the garment to be warm and comfortable, and the Duffle Coat was very popular with both officers and men of His Majesty's fleet during World War II. After the war the young fashion-setting set of the Continent adopted the Duffle Coat as an extra, swagger garment for wear in bad weather; it has been brought to the United States recently, and in cooperation with Baxter Mills which loomed a special cloth suited to American climatic conditions, one manufacturer has already succeeded in getting the Duffle Coat well on the way to becoming an all-American fashion.



THE DUFFLE COAT WORN BY NORWEGIAN, AND THEN BRITISH, SAILORS DURING WORLD WAR II BECAME A NEW SPORTS OUTERCOAT FASHION



THE GREAT COAT
for 19th Century open transportation



THE POLO COAT almost a century old and still sound fashion



THE COONSKIN COAT phenomenon of the mad 20's

WOOL SORTING Wool is sorted to obtain a uniform lot.

CARDING

Scoured wool is carded to remove nubs and foreign matter and to open the fiber masses. The carding machine is a series of large cylinders and small rollers covered with wire cloth revolving at different speeds and in different directions to organize and lay the fibers parallel.

DYEING

The color of both the light and dark serge is obtained by mixing top dyed in different shades of yellow, brown, green, olive, etc., with white top.

DRAWING

The top is then doubled and drawn and personal the shade and reduced in site preparatory to spinning. The shade and reduced in site preparatory to spinning. The



WARPING

Approximately 4,000 warp ends are assembles wound on loom beams under even tension

FINISHING

Lengths of cloth known as pieces are burled and mended and sanded and then fulled and scoured and dried. The cloth must then be sheared, pressed and conditioned. It is then rolled and packed for delivery to the Quartermaster.

RAW WOOL

Fleece or pulled wool. Not lower grade than 64's U.S. Standard.



SCOURED WOO

Clean and ready for processing

SCOURING AND DRYING

Wool is scoured in multiple bowl washers or cleaned by naphtha. Domestic wools shrink from 38 to 68% in weight - average 60%.

GILLING

Multiple slivers from the card are fed into gill boxes where rows of vertical pins and rollers parallel and draw out the fibers to increase parallelization and to equalize the fiber distribution in the sliver delivered.

WOOLTOP-WHITE

raw material for the spinner



SPINNING

The roving is spun into yarn either on spinning frames or mules.



Single Yarn

DRAWING-IN
Each thread of the warp is separately drawn through
a heddle on a specified harness frame. The warp
is then reeded to width.

COMBING

Cilled sliver is then fed to the comb. In the combing process the long and short fibers are separated. The former is delivered in a loose roping called "top." The latter is separated out as noil. The top is then regilled.

BACK WASHING

The dyed top is washed to remove any excess due and to obtain an improved working con-dition. It is then regilled and in some instances recombed.

TWISTING

As the specifications call for a two ply yarn, both warp and filling, two strands of yarn must be twisted together. It is general practice to insert more twist in yarns to be used in the warp.



WEAVING

The harness frames and reed are then mounted in the loom where the harnesses are raised and lowered according to a determined pattern, raising and lowering the warp ends to form the shed through which the shuttle passes. The shuttle carries a filling bobbin which pays off yarn as it races from side to side. This cycle of changing harness and shuttling of the bobbin is repeated the required number of times per inch.

FABRIC

Military requirements cannot be measured in terms of yardage alone . . . The mounting requirement of textiles for military use is slowly but inexorably making inroads into what will be available for civilian purposes. To gain a true insight into the

share of the total textile production which the military needs, it must also be remembered that the far-above-average specifications of quality and construction tend to remove many additional pairs of workers' hands from the all-over field.

RAW MATERIAL

Fleece or pulled wool, noils, clips, waste and rags of proper haracter comprise the raw material of this heavy woolen fabric.

fleece or pulled sheeps' wool



SORTING

The wool is sorted to obtain a uniform lot.

SCOURING

Wool is scoured in multiple bowl washers. Serge Clips Self

Rags



SORTING

The rags and clips are sorted for color and character, usually prior to purchase by mill.

GARNETTING

Rags and clips are returned to fiber masses by the garnett.

DYEING

SCOURED DYED C

Dyed stack and white stock are used to produce olive drab. It is advantageous to use 0.D waste and clips, etc., but sometimes even these ingredients must be dyed.





Proper portions of the various stock required for grade and color are piled layer upon layer. The mix pile is then cut vertically and fed to the picker.

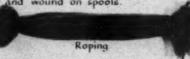




The sandwiched layers of oiled stock are fed to the mixing picker which mixes and opens the stock.

CARDING

The stock is carded to remove nubs and foreign matter and to open the fiber masses. Three cards in line constitute a set. They are the breaker, intermediate and condenser cards. Roping, i.g., multiple individual strands with mock twist, is delivered from the tape condenser and wound on spools.



SPINNING

The spools are mounted in the mule or ring frame and spun into yarn.



Single yarn for both warp and filling.

WARPING

Approximately 2,000 ends are assembled, sized and wound on warp beams, drawn in and reeded to width

WINDING

The filling yarn is wound on shuttle bobbins.

WEAVING

The harmous frames and reed are then accounted in the loom where the harmouses are raised and lowered according to a determined pattern, raising and lowering the scare ends to form the sheet brough which the shuttle passes. The shuttle carries a filling bother which pays off para as it races from side to sale. This cycle of changing harmons and shuttling of

UNFINISHED FABRIC



SCOURING

The fabric is scoured to remove the applied oil.

FULLING

The cloth is then fulled and shrunk in length and width. A certain degree of felting takes place here adding strength and body to the cloth.

FINISHING

The fulled cloth is napped and sheared and pressed to give it the desired character. Sometimes piece carbonizing is required to remove vegetable matter.

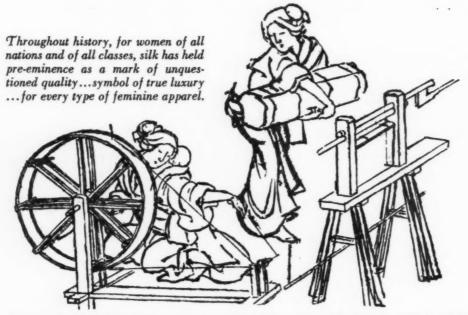
OVERCOATING



On this and the preceding page we reproduce charts which indicate the quite complex flow of raw materials into two types of fabrics used by the United States Armed Forces, and the rigid controls which are exerted step by step. From this you can gather that the size of

military orders for textiles is not to be stated accurately in terms of millions-of-yards alone; if the controls and specifications were held to commercial standards, the setting aside of goods for military needs would not exert such a sharp effect on what is left for civilian needs.

Courtesy Natl. Assn. of Wool Mfrs.



WILL SILK RETURN TO MASS LEVELS IN OUR TIME?

The under-\$3.50 silk tie and the under-\$20 silk dress... typical of volume fabric fields... are vanishing. Should silk be classified as a luxury and removed from price control?

BEHIND CLOSED DOORS in October, the representatives of the Japanese silk industry proposed to the International Silk Association that price ceilings as well as price floors for raw silk be set and rigidly enforced throughout the world. At that time silk was selling at \$3 to \$3.50 a pound and, in relation to the prices of other natural fibers, it was within reasonable range.

It was obvious that these representatives of Japan's most important silk producers were fully familiar with the economic analysis of silk's sales performance in ratio to its price, both before and during the growth of chemical fibers; apparently they were in full accord with the proposal that the surest way to help silk recapture any sizable portion of the American market was to bring and hold its price structure within a range which could ensure mass consumption.

By the time the Japanese delegation returned to its homeland, apparently, the fever of inflation had infected that country's sericulturists; word was sent back that there could be no further consideration of the price-floor-and-ceiling plan which Japan itself had proposed . . . and silk has been boosted to as high as \$6.75 a pound.

No Geography to Human Nature

To those who may profess to be shocked by this sudden reversal, it might be pointed out that the sheep raiser in New Zealand and the cotton farmer in North Carolina made no effort whatever to put brakes on their product prices . . . so why expect the Japanese silk producer to react differently to the profit possibilities offered in an inflationary world situation? Why, if cotton should be raised to as much as \$1 a pound in Egypt, if wool in Australia should go to \$4 a pound . . . why, asks the Japanese sericulturist, should he not ask \$7 for a pound of silk when his only serious producing competitor, China, is virtually removed from access to the rest of the world?

When asked whether the Japanese industry does not regard this pricing philosophy as a serious detriment to its customer relations with American mills, the answer is generally along the lines that if America won't pay the price, India will, or Italy, or France, or Egypt or any other nation. In this country we may decry such short term thinking. We may rationalize that the American consumer potential is much greater than that of all the other countries combined; that the only relatively secure basis for future volume distribution must be laid within our boundaries; and so Japan is seriously jeopardizing the future of silk in this country.

But this is a form of argument which promises to exert as little influence in bringing down the price of silk as it has on the growers of wool abroad and of cotton at home. Apparently the only argument with force continues to be the natural law of supply and demand . . . which over a period of time can pretty well be relied upon to normalize almost any situation.

Problems in Domestic Silk Pricing

The only realistic attitude the American mill can adopt is that silk will remain high in price, and thereby draw narrow boundaries around its potential market. On this basis, then, perhaps silk should be removed from the category of fibers essential to the civilian economy and be placed in the listing of uncontrolled luxuries. Certainly, if silk remains at \$7 a pound, or anywhere close to that figure, it can by no stretch of the imagination be considered as anything but a high priced luxury; and its market will consist only of those relatively few consumers with spendable income so high that even after paying high taxes and buying Government bonds, they will still be able to purchase silk along with their caviar.

Previously we have iterated the warning that, as matters now stand, the silk industry has already lost virtually one complete generation of users in this country. The women who were under sixteen before the beginning of World War II have no knowledge of this fiber except as a word. If the Japanese sericulturists persist in their current inflationary mood, it is possible that half of another generation may never even hear of silk. This, it appears to the textile industry's sound thinkers, is the real danger to the future of silk in this country. As time lags, it will grow increasingly difficult to educate the American public to the undeniable qualities of this fiber; and we may be sure that the textile chemists will see to it that less and less of an opportunity exists for silk to regain any sizable portion of the field.

Should the silk industry lose still another generation, silk, except for a small segment of our upper level consumers, might then be reintroduced to the American public as a sensational new fiber discovery!





ACCA: A cloth used in British Isles for formal, regal, and conventional purposes. Vestment cloth is made from Acca. It is a richly brocaded material often interspersed with animal or pastoral designs to enrich its appearance.

ADAPANGIA: A type of raw silk raised in India.

AEROPHANE: Thin silk gauze used as trimming on dresses and headgear; made on doup weave.

AGGONED BUNDER: Produced in the East Indies and Japan, it is now the best grade of raw silk raised in these areas.

AGRA GAUZE: A strong, transparent, gauze-like silk fabric; given a stiff finish.

ALGERIAN SILK: A coarse, crude, irregular silk fabric made with a cotton warp. It is called a silk cloth because the filling is silk frison which covers up the cotton warp.

ARDAMU: An Iranian raw silk.

ARDASSE: A low quality Iranian raw silk used to make embroidery yarn.

ARMOISINE: Taffeta-type fabric made of silk for men's and women's wear in the 18th century and earlier.

ARMURE: This French term implies a fabric made with a small pattern in a pebble or embossed effect. Drapery fabric of this name is made with the small woven designs on a twill or rep background.

Armure is used as a dress fabric and comes plain, striped, ribbed or woven with a small novelty two-color design.

ARMURE SATINE: A silk cloth which shows a fine twill armure surface and a satin back construction.

AVIGNON: Lightweight lining fabric made of silk taffeta.

BACK: The underside of cloth as it is being woven in the loom; in silk weaving, however, the fabric is usually woven face-down.

BALDACHIN, BAUDEKIN, BODKIN, BALDOQUIN: Costly brocades of silk interspersed throughout with gold or silver threads and often further embellished by the use of precious stones. These gorgeous fabrics, many of which are still extant, reached their greatest popularity during the Crusades, the Renaissance and other days of chivalry. Baldachin has been or is used today for canopies, ceremonial robes, pageants, trappings, armor, etc.

BANTINE: A raw silk variety peculiar to Italy.

BARATHEA: Fine textured material of broken filling character. High quality stock is used in making this cloth. Used as mourning materials and in cravat cloth. Cloth is black generally.

BARONET SATIN: A high luster, summer wear material made from silk, rayon or cotton, or from combinations of these yarns. The cloth has to be handled with utmost care since it has the tendency to pull and catch if rubbed against any surface; washing of the goods requires close attention in order to preserve the luster and to prevent shabbiness of appearance.

BENGALINE: A popular material made from the more important textile fibers. This popular or rib effect fabric was first made of silk in Bengal, India. The texture is high and the use of a coarse filling gives a pronounced corded effect. This fabric, which gives good wear, is very durable and is used for mourning ma-

terial, coating, ensembles, millinery and suiting. The cloth, which is yarn- or piece-dyed is finished at 40 inches. Grosgrain may be classed as bengaline cut to ribbon width.

BLONDE: Unbleached silk lace made with varying sizes of yarns. Floral designs are used in this lustrous article which appears in colors, black and white. The original name for blonde was Nanking, the city in China where the natural, unbleached silk was raised.

BLUTEAU: 1. A finely woven silk cloth used for sifting of flour in flour mills. The fabric has a very high sley and pickage and has been largely produced on hand looms in Switzerland. It can be used as bolting cloth in screen or stencil printing.

2. A shirting fabric which is largely characterized by a mesh effect in the goods; made from silk, cotton, hair fibers, etc. There are many grades of the cloth on the market, all possessing evenness in every respect.

BOILING-OFF SILK: Known also as boiling-out or degumming, it is the removing of the silk gum or sericin from the raw silk. Tussah silk has a boil-off of about ten percent; true silks may lose twenty-five percent, or more.

BOMBAZINE: One of the oldest textile materials known, Bombazine has gone through many changes through the ages. Originally it was an all-silk fabric. From time to time other fibers have been used in making the cloth. Today this cloth is made of silk or rayon warp and worsted filling. Imitations in cotton are seen on the market. In black, it is used in the mourning cloth trade.

BOURETTE SILK: Made from silk manufacturing waste. The yarn is coarse, lumpy, and irregular and there is little elasticity. Bourette fibers are short, and because of this fact, along with its felting properties, find much use in novelty cloths, suitings, curtainings, dressgoods, and decorative fabrics. The yarn is made from tufts of hair, nubs, noil, silk wastes of many sorts which give a fancy, novel effect with brilliant spots of color.

BRIGHT SILK: Silk which has all of the sericin or silk gum removed; may run from ten percent in the poorer qualities to about thirty percent in the superior types, before degumming.

BROAD GOODS: Woven goods of silk 12 inches or more in width; includes cloths to be used in the manufacture of neckwear. English practice is to classify any fabric over 18 inches wide as broad goods.



CABECA: East Indian silk of fine quality.

CACHEMIRE DE SOIE: A high grade taffeta, usually made of fine silk yarn, which is given a finish to resemble cashmere fabric.

CALAMETTA: Italian raw silk in the un-degummed state,

CANE: Another name for silk warp.

CANNELE, CANALE, CANELLEE, CANELE: When ribs are woven in the goods, the term signifies the cord effect in the warp direction, somewhat similar to the Bedford cord weave. Filling effects can be made as well, and there have been instances where the term has been applied to these constructions.

Cannelé is made of silk yarn with two warps and one filling. One warp is single ply which gives body to the fabric; the other is a ply warp which makes the cord effects.

CANTON CREPE: Filling crepe with a pebbly surface . . . six right hand and then six left hand threads in arrangement. 14/16 to 20/22 denier. Durable, launders well, and is a sturdy silk material.

CANTON SILK: Broad silk term for the raw silk from southern China. Despite its softness and good luster, the silk is difficult to throw because of its hairiness.

CEVENNES: The best grade of French raw silk. This white silk is used in the manufacture of silk lace made in Bayeux, Caen and Chantilly. It was first made, however, in Cevennes and the name still clings.

CHAGRIN: A silk fabric given a pebble finish to simulate leather. Also a narrow braid made of silk or metallic thread.

CHAMBERY: French dressgoods made from silk or rayon warp and worsted filling in a small twill weave effect.

CHARMEUSE: A popular dress silk made on an eight-end satin weave, with a 70 to 80 reed. The fabric is soft in feel, drapes very well, and is a leading material for evening wear.

CHARVET SILK: Made from a diagonal rib weave, this soft, dull tie-silk made in stripe effects drapes very well.

CHENILLE: In French, means caterpillar. Chenille fabric has a fuzzy or fluffy face which resembles this insect. The cloth is of the cut pile type and the napped ends or floats can be picked out easily. It is not a rugged or durable cloth but is very attractive. Chenille is used for dressgoods, rugs, table covers, curtains, bedspreads, and in the millinery trade.

CHIFFON: Plain weave, lightweight, sheer, transparent fabric made with fine, highly twisted, strong yarn. The material is difficult to handle but drapes and wears well. This stately or conventional type of fabric is very durable despite its light weight. Must be laundered with care.

CHIFFON TAFFETA: A good quality, lightweight taffeta, soft in feel and lustrous in finished appearance. Used for evening gowns, blouses, dresses and suits.

CHIFFON VELVET: Similar to woolen broadcloth but lighter in weight, this fabric is made of silk or rayon in a clear-pile material made in many qualities. Drapes well, is durable, and has a smooth feel and excellent finish. Used in evening wear and wraps.

CHIFFONETTE: The sheerest of all chiffon fabric weaves.

CHINA SILK: A very soft, extremely light-weight silk made in a plain weave, used chiefly for linings. Irregularities of threads, caused by the extreme lightness and softness of China silk, are characteristic of the fabric.

CHIRIMEN: Japanese silk crepe used for blouses, dressgoods and kimono cloth. Comes dyed or printed,

CHOPS, CHOP MARKS: Used by the Chinese and Japanese when silk bales are shipped. Each reeler has his own chop mark or trade mark. By these it is possible to distinguish good silk and poor silk; most silk, however, runs fairly uniform. The neatly designed printed chops are found in all silk bales.

CHRYSALIS: The growth of the silkworm that is encased in the cocoon. It is destroyed when the cocoons are placed in sulphur fumes which kill the worm so that the filaments will be easier to reel.

CIRE: Originally the term meant English shroud fabric which had been given a wax treatment. The finish is still the same as in the original and is much used on silks on which a smooth, lustrous effect and feel is desired. Used chiefly for evening wear.

CLEARANCE: The contraction of silk yarns when twisted or thrown.

CLOTH OF GOLD: Cloth which through the ages has been referred to as having gold threads, strips of gold, or gold twisted with other textile fibers. Gold has been used in tapestries, brocades, brocatelles and other silk fabrics, many of which now repose in museums.

CORAH SILK: Name given to an East Indian handkerchief material which is featured by a colored pattern on a creamy white background. The silk is durable and launders well.

CORKSCREWS IN RAW SILK: Places where one or more cocoon filaments are longer than the others and give the spiral effect of a corkscrew.

COTTON BACK SATEEN: This cloth, made in silk mills, is single in construction and has good body. When made of a five-shaft satin weave it is called sateen; when made of an 8-end, warp effect satin weave, known as Venetian.

CREPE: From the French, derived from Latin, and means curled or crinkled. Originally it was a silken material dyed black to symbolize mourning fabric. The cloth was heavily sized and treated by a crimping method to give a particular effect and a harsh, granular feel.

Crepe is now applied to fabric with a pebbled, rough or granite feel and appearance. Crepe effects may be obtained by some definite high twist in the warp or filling, or both; georgette crepe has crepe twist in the warp and filling, crepe de Chine only in the warp.

Crepes are made in the finishing for the desired effect. Some silk and rayon crepes are crepe de Chine, crepe meteor, Georgette, crepe Algerian, Berber crepe, charmeuse crepe, Jersey, Diane, lease, sublime, Lisse, crinkled crepe, canton crepe, crepe satin, faille, chenette, faille sublime.

CREPE-BACK SATIN, SATIN CREPE: Satin weave with a crepe-twist filling. As the fabric is reversible, interesting effects can be obtained by contrasting the surfaces.

CREPE CHARMEUSE: A rich filling, dull luster, piece-dyed silk that has glove-like smoothness. Grenadine silk is used for the warp; the filling is of crepe-twist yarn. Charmeuse lacks the stiffness and body characteristics of satin, but



it clings and drapes very well to fall into graceful folds.

crepe de chine: A raw silk cloth reeded in the loom at about 4/50/2, which means that there are four ends in each of the 50 reed splits, and that each of the four ends is a double thread — a total of 400 ends per inch in the texture. Filling textures range from 60 to 80 picks of 2 or 3 thread 20/22 denier with 60 to 65 turns of twist per inch. A plain weave is used to make the cloth which is soft and more or less lustrous. Used for blouses, dressgoods, evening wear, skirting, underwear. This fair-to-excellent quality staple is dyed or printed. It is easy to manipulate, launders well, and gives good wear.

CREPE DE CHINE, SPUN: A silk cloth of Japan made with spun silk warp and thrown silk filling. Features of the fabric includes soft hand, considerable luster, good washability and low price. The cloth, incidentally, is sold by weight.

CREPE MAROCAIN: A rather heavy dress-weight crepe fabric simulating canton crepe.

CREPE METEOR: Light in weight, the filling arrangement is the same as that used in georgette crepe. The cloth is soft in feel, drapes well, and gives good wear. Comes in light shades and colors, launders well, and is easy to manipulate.

CREPENETTE: An all-silk pongee type fabric with crepe effect. Dyed solid shades for dress-goods.

CREPELINE: A lightweight silk dressgoods fabric made to simulate crepe de Chine.

CREPON: Of the crepe group of silks, but stouter and more rugged than the average crepe. The effect is obtained by the types of yarn used in making the cloth. One way is to use yarn of right- and left-hand twist according to some plan or motif; another method is to use yarns with varying twists so that the looser twisted yarns will give the crepe effect.

Crepon is durable, drapes well, launders easily. The crepe yarns, however, will shrink; hence, care must be used in laundering or dry cleaning this fabric.

CUIT: Silk with all of the silk gum or sericin boiled out. Also known as bright silk. Cuit may range from 10 per cent in the case of Tussah silk up to about 30 per cent in the best qualities of Japanese and Italian silk. The word means boiled and implies that all the sericin has been removed by boiling from the fiber or filament.

DAMASSIN: Brocade, brocatelle or damask of silk in which the design is embellished by interspersing metallic threads in the motif.

DEGUMMING: The process of removing the gum from silk, the sericin from fibroin. Boiling-out of the silk in a hot soap-bath removes the gum. The amount of gum removed will be from about 10 per cent in the poorest grades to 30 per cent in the best qualities.

DIAPER: In the Middle Ages the term meant a rich silk material first made in Ypres, Belgium. As time went on this cloth of Ypres (d'Ypres) took on a different meaning until today it now means diaper fabric, the soft, absorbent, bleached material.

DOUPION: Silk thread made from two cocoons that have nested together. In spinning, the double thread is not separated. The yarn is uneven, irregular, and diameter is large.

It is used in cloth of this name as well as in pongee, nankeen, shantung and other cloths where this type of yarn is desirable.

DOUBLE-FACED SATIN: Two sets of warp yarn and one system of filling are used to make this cloth so as to present a satin face on both sides of the goods. Both warps interlace with the filling according to a weave motif.

DRAP D'ALMA: French for a cloth of small twill repeat. This silk fabric is light in weight, comes in white and colors, and is used for dressgoods.

DRAP DE LYON: A plain woven silk rich in quality. The fabric has been famous as a staple in the cloth halls of the Continent.

DUCHESSE: A silk fabric made with a dense warp, very lustrous, smooth in hand, and popular for women's wear.

DUVETYNE DE SOIE: A smooth, downy, rather heavy fabric made usually from spun silk, and napped to simulate plush. Made from a six-harness irregular satin weave.

EMBROIDERY SILK: A type of embroidery yarn or thread where a group of single, untwisted, or loosely twisted silk yarns are plied with slight twisting to give the yarn sufficient body for manipulation.

EMPRESS GAUZE: A fine, flower-figured fabric made with a silk ground and linen figures.

EOLIENNE OF AEOLIAN: Dress material made of silk warp and cotton, rayon or worsted filling. The cloth is light in weight, has a glossy finish, is dyed in the piece, and the weave used forms cross ribs.

EPINGLINE: A warp rib dressgoods made of silk warp and worsted filling. The cloth has a pebbled effect and feel similar to crepe,

ETOILE: A lustrous satin cloth used as dressgoods. Also a star design made by filling in the meshes of the net foundation.

FAILLE: Ribbed silk with crosswise rib effect. Cords are stouter than the warp. Soft in feel and belongs to the grosgrain family. Used for coats, dressgoods, hand bags, and wears well if handled carefully.

FAILLE TAFFETA: Stiff and crisp with a fine cross-rib. Used for dresses and coats.

FARMERS SATIN: Italy contributed this cloth as an imitation of the genuine silk satin. A name for lining fabric today.

FIBER SILK: The old-time commercial term used to signify artificial silk.

FIBROIN: The insoluble part of the raw silk filament. The worm has two glands that contain the silk or fibroin which, on coming into the air, is cemented together by the silk gum or sericin.

FILAMENT: An individual strand that is indefinite in length. In silk, it may run from 300 to 1400, 1600 and even 1800 yards in length. Filaments are finer in diameter than fibers. A fiber or a filament is the smallest unit in any type of fabric.

FILATURE: A place or establishment where silk reeling is carried on. Japan has about 3,000 of these places with more than 300,000 reeling basins. Filatures will range from 50 basins up to more than 1,000. About 350,000 are employed in this part of the industry, and all but about 10,000 are females.

FILATURE CLASSIFICATION IN THE YOKOHAMA MARKET: There are six major grades in silk classification: 1. Grand double extra; 2. double extra; 3. Extra; 4. Best Number One extra; 5. Best Number One; 6. Number One.

Each of the above grades may be further divided into three classes, A, B, and C. The number of mills that supply the great Yokohama market number more than 1,200. The production of the mills is considered as belonging to one of the above grades. Silk that grades lower in quality is usually consumed in domestic manufacture.

The percentages of the above grades are as follows: Grand double extra, 1 percent; double extra, 6 percent; Extra, 8 percent; Best Number One extra, 16 percent; Best Number One, 37 percent; Number One, 32 percent.

FILO SILK: A two-ply, soft spun silk yarn used in embroidery.

FINISHING AND PACKING SKEINS: Assorted silk skeins in book form with six skeins on the bottom layer, and five layers to the book. The work is done by apparatus and the books are bound with heavy cotton thread. These thirty-skein books are packed in wooden cases and sent to dealers in Yokohama and Kobe. In one case there are 15 or 16 books, the weight being seventy to ninety pounds.

FLAT CREPE: Name applied to silk material whose surface is smooth and flat because of the manner of twisting the crepe yarn used. Heavier and smoother than crepe de Chine, the goods are used for dressgoods, blouses, slips, etc.

FLEURET OR FLORET: The choicest fibers obtained from spun silk carding.

FLORENTINE: A heavy silk fabric, woven figured or plain twilled, chiefly for waistcoats.

FLOSS: Silk fiber of various types and grades not suitable for reeling. This must be removed before regular filament can be reeled. Also implies the soft, loosely twisted thread used for embroidery.

FORTUNY PRINTS: A series of rich artistic fabrics executed by a secret screen printing process. Originated by Mariano Fortuny of Venice, the Renaissance motifs used were featured by the use of light colors on dark backgrounds. Some of the fabrics were stamped with gold or silver to give further vividness to the pattern. Twill or satin weaves are used in the plain constructions, while pile effect weaves are used in velvets and velveteens for the more expensive materials.

FOULARD: A lightweight, soft-feeling silk which is dyed or printed to advantage. It was originally made for the handkerchief trade but is now found in neckwear, dresses and linings. It gives good wear, has good color combinations, and is much used for summer wear.

FRISE: Frisé fabrics are usually woven double shuttle, single cloth, the top pick or filling end forming the loop. A wire gauge is used in each dent that runs parallel to the pile yarn. Frisé fabrics may also be woven double shuttle and double fabrics, but this gives a rib effect on the face of the cloth. Frisé fabrics are also woven on wire looms, where a round wire is thrown across the loom and the pile yarn loops over the wire. The wire forms the loop instead of a top filling end.

FRISETTE: The diminutive ette seemingly indicates that this would be a smaller replica of a frisé. However, a frisette is made on a flat weave, and in order to obtain the imitation of a frisé, a rep weave is used, so that when the fabric is woven small ridges or hills are formed. In reality, a frisette is a rep fabric, somewhat like corduroy; it has a cut pile, and is used in the upholstery trade.

FRISON: Also known as knubs, it is an unreelable cocoon which has pulled loose and become matted into a thick, rope-like strand. Also tangled silk on the outside of a cocoon, known as floss.

CEORGETTE CREPE: A staple, plain or crepe weave silk fabric usually woven with a 40-reed or a 45-reed with two ends per dent. The warp is usually two-thread or three-thread, 13/15 up to 20/22 crepe yarn twisted about 60 turns per inch. The filling is generally the same as the warp. Textures range around 80 x 70.

the warp. Textures range around 30 x 70.

The warp and the filling arrangement is two ends of right-hand twist, followed by two ends of left-hand twist. This produces a pebble-like feel and crepe effect.

Georgette may be white, dyed or printed. This rugged, lightweight fabric has stiffness and body, and gives excellent wear because of its construction.

CLORIA: A very closely woven, lightweight fabric used for umbrella covering. Generally made with plain weave, but twills and satins are also used. Originally made with silk warp and fine worsted filling; also made with cotton filling, as well as all cotton.

COSSAMER: A very soft silk of the veiling variety with a pronounced gauze effect. Used for brides' veilings.

CREENS: Breeds of silkworms which give a greenish cast to the cocoons.

CREGE SILK, RAW SILK: Raw silk yarns run together without twist. The yarn is reeled from cocoons and is used as is or may be converted into organzine or tram yarn by throwing.

GRENADINE: Curtain grenadine is a fine, loosely-woven material similar to marquisette. Is often mixed with cotton. Also, a fabric made on a Jacquard loom. Uses include blouses, dresses, etc.

CROSCRAIN: A heavy, rather prominent ribbed cloth that is made from plain or rib weaves, according to various combinations. The cloth is rugged, durable, and of the formal type. Used in ribbons, vestments, in churches and in ceremonials.

In the so-called Gros family there are numerous cloths that are alike in many respects. Some of them are: gros des Indes, gros de Lyons, gros de Londres, de Naples, de Paris,

and almost any other city in the past or present in Europe had some particular type of gros cloth named after it. The cloth sprang up during the medieval days and in the days of the guilds and cloth halls of the many European cities, many of which still function and are very well known throughout the world. Grosgrain is often referred to as bengaline cut to ribbon width.

HABUTAI: The term means soft or downy. It is made of Japanese silk waste stock that can be twisted or thrown very little or not at all. This plain weave fabric is heavily sized, and piece-dyed or printed. Many defects are seen in the cloth which presents a typical shot-about effect. However, the defects do not injure the sale of the goods. Habutai is used for dresses, coats, shirting, office coats, etc.

HAIRINESS IN RAW SILK: The condition of the thread when there are numerous loose ends of cocoon filament projecting from it.

HALF SILK: Silk fabrics in which either the warp or the filling is made of some yarn other than silk.

HONAN: Silk pongee cloth made from wild silkworms raised in the Honan area in China. The fabric is noted for its uniformity of color since the worms are the only wild type that give even dyeing results.

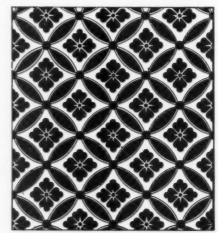
ILLUSION: A very fine, all-silk tulle which originated in France. Its cobweb appearance makes the cloth ideal for trimmings and veilings. Made in 54-inch and 72-inch widths.

IMPERIAL: Italian brocade embellished with gold and silver threads worked into the motif. This type of silk fabric was mentioned by Marco Polo in the 13th Century.

INDIA SILK: Hand-loomed plain weave fabric that is very thin in texture and soft in feel. Made chiefly in India.

IRIDESCENT: In silk weaving the term implies a color effect made by the use of warp ends and filling picks of varying tints or hues. Properly, iridescent effects will show alternating or intermingling colors, and refers to any glittering of colors which seem to change when rays of light fall onto the fabric without reference to what the colors are.

ITALIAN SILK: A very high quality raw silk which has excellent cohesion and is suitable for single weaving. It has good strength and elasticity, is easily prepared and is free from imperfections. It has the highest boil-off per-



centage of any filament brought to this country, 27 to 30 percent. In addition to its use for dress goods, Italian silk is much used in the knitting trade for high grade hosiery, underwear and glove silk.

JACQUARD: Method of weaving invented by Joseph Marie Jacquard of Lyons, France, at the beginning of the 19th century. Jacquard weaving produces elaborate weaves in the loom by the substitution for the ordinary and restricted number of heddle frames and pattern chains, of a set of perforated strips of cardboard punched according to intricate design. The Jacquard motion revolutionized the weaving industry and plays a prominent part in modern tapestry, brocade, brocatelle, damask and figured dress-goods production. It was a development of the old-time draw loom.

JAPANESE CREPE: Much of this fabric is imported from Japan, but some of it is now made here. It is quite rough, a trifle harsh in feel, and comes in white, prints and plain colors.

JAPANESE SILK: From the yarn standpoint, it is silk raised in Japan, the leading silk producing country of the world. From the cloth angle, it is a plain weave material woven in Japanese mills, with the warp and filling identical in every detail. The cloth has good luster, soft feel, and is dyed in plain colors. The materials can be made in figured designs, or may be printed in the same manner as calicoes. Habutai, nankeen, pongee, rajah and shantung are types of the material.

JOMAYU: Japanese term for good cocoons. There is an annual production of about 750 million pounds of cocoons; jomayu accounts for about 90 percent of this yield.

KAGA: General term for average quality silk materials made in Japan.

KAKEDA: A fine raw silk of Japan.

KAWAMATTA: Low quality Japanese silk materials.

KHAIKI CLOTH: A plain weave, light, washable Japanese silk fabric.

KIMONO SILK: This kimono and lining material is a soft, plain-woven, lightweight silk which is usually printed in elaborate designs.

KIN: This equals 1.32 pounds, and 756 kin approximate 1,000 pounds. The kin is used in quotations for raw silk . . . yen per kin.

KINCOB: Made in India, this outstanding handwoven fabric is used in ceremonials, functions of state, etc. Made of silk, the material is richly embellished with gold and silver threads woven into the brocade background.

KNIB: Term given to knotty and uneven places in silk fiber.

KOREAN SILK: Made from doupion cocoons, this irregular, low-priced silk comes in the natural, or is piece-dyed. The filling is particularly uneven and gives the goods a slubby appearance.

LACET: Originally a silk braid used to form patterns for laces.

LAK: An Indian term signifying the best reeled portion taken from Tussah cocoons.

LAME: A silk brocade woven fabric in which metallic threads are used in the warp or the filling for decorative purposes. The word means to flatten.

LAVENTINE: Thin silk fabric used for sleeve linings chiefly.

LEVANTINE: A stout twilled silk, each side finished the same but of different colors.

LIBERTY SATIN: A popular seven, eight, or ten shaft satin cloth of raw silk warp and single, spun silk filling. It was named for the Liberty Company of London.

LOOPS IN RAW SILK: Small open places in thread caused by the excessive length of one or more cocoon filaments.

LOUSY SILK: Small specks of a detrimental nature on the face of silk material. They may be caused at several places in manipulation of the silk from raw state to finished cloth.

LYONS VELVET: The best quality of millinery velvet from Lyons, France. The fabric is soft and thick in texture featured by a deep silk pile effect. It is used for fitted and draped hats, hand-made flowers and appliqué embroidery.

MACCLESFIELD TIE SILK: This high texture, hand woven tie silk is characterized by a small all-over pattern. Ties made of this fabric give splendid wear.

MACHINE TWIST: A three-ply silk thread spun with left-hand twist.

MARABOUT: A single warp, five or eight shaft silk satin material used in the millinery trade. Also a white silk thread used in crepe weaving. It is made of three strands which are given high twist and dyed in the gum condition.

MARBLE SILK: Silk material which has a mottled appearance caused by the use of multicolored filling yarn or by warp printing prior to weaving of the cloth. This lightweight dress fabric is popular from time to time.

MARCELINE: Named for Marcelin, France, it is a thin, light, closely woven silk made of plain weave. Also a plain silk cloth made of single warp and with one, two or three picks placed in the same shed of the loom to give a corded effect in the fillingwise direction.

MAROCAIN: A crepe fabric featured by a ribbed effect. It is used for suits of dressmaker type.

MARQUISETTE: A gauze fabric, light in weight. Comes in white, solid colors and novelty effects, used for curtains and dress fabrics.

MERCILENE: A closely woven, thin, diaphanous silk fabric.

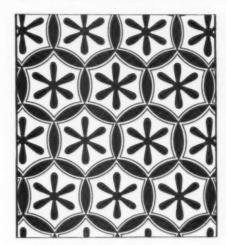
MESSALINE: Named for the wife of the Emperor Claudius, it is a five-shaft satin weave silk fabric which is lustrous, soft and dressy. Two-thread organzine and three-thread tram are used in making the goods which are usually skein-dyed. Most messaline comes in solid shades

MIKADO: A lightweight, all-silk taffeta much used in England.

MOCADOR: Silk fabric on the order of faille which has fine filling-wise lines in it. Made in colorful stripe patterns, the fabric is much used for neckwear.

MOIRE: Cloth which has the desirable watermarked effect in the finished fabric. Taffeta may be used, but usually a ribbed type of silk cloth like poplin is finished this way.

MOSSES: Large hanks of reeled silk, about one pound in weight, produced by the Chinese in home industries.



MOULINAGE: The last operation in raw silk spinning, prior to weaving and dyeing.

MOUSSELINE SATIN: An 8-shaft satin weave, allsilk fabric made of fine silk. 50 denier warp and 100 denier filling are used in this highreed, low-pickage fabric which has a nonlustrous finish.

MOUSSELINE DE SOIE: Silk muslin on the order of chiffon with a crisp, firm finish. While cool to the wearer and popular in evening wear, the material does not launder satisfactorily. Its service to the wearer is comparatively short.

MULBERRY SILK: The product from those worms which have fed upon the leaves of cultivated mulberry trees to distinguish the silk from wild or Tussah silk which has been raised on the leaves of the oak, cherry tree, castor oil plant, and various bushes.

MYSORE SILK: Broad term for an East Indian silk dressgoods. It is soft in hand, comes in plain weave, and may be dyed or printed in floral motifs.

NACRE: The iridescent, changeable effect observed on some silk or rayon fabrics. The effect is obtained by the use of contrasting colors in the warp and in the filling.

NANKEEN: Also known as Shantung, Rajah, and Shantung-rough, this plain weave cloth is made from Tussah silk which affords good wear. It is on the order of pongee, with the yarn irregular in the cloth.

NATTE: A basket weave silk dressgoods material in which the warp and filling are of contrasting colors.

NEATNESS: Expression used to denote that raw silk is devoid of hairiness, loops, nibs, etc.

NERI: Italian term for a grade of waste silk, obtained from the inner smooth skin of cocoons; left over in the residium after reeling.

NET SILK: English term for thrown silk.

NO-THROW: Silk filaments which have just enough twist or cohesion to hold the respective strands together.

NUN'S VEILING: A fine sheer, substantial material which has a tendency to shine. It is used for veiling by nuns, and in colors finds much use in dressgoods, kimono cloth, cloaks, and baby clothes.

obi: Name for the broad sash worn by the women of the Far East. It is made of silk moiré, taffeta, brocade or plain woven silk. OILED SILK: A thin, transparent silk fabric which has been soaked in boiled linseed oil and dried. Waterproof and fairly pliable. Used mostly for shower curtains.

ORGANDY: In silk it is a light, transparent fabric on the order of cotton organdy. Its characteristics are stiff, hard finish, watered or moiré effect, transparency.

ORGANZA: Thin, transparent, stiff, wiry silk. Crushes or musses, but is easily pressed. Plain weave. Used for evening dresses, trimmings, neckwear, as well as for foundation material over which delicate sheer materials are worn.

ORGANZINE: A warp yarn in the silk trade. Tram is the name for filling yarn and does not require as much twist as organzine.

not require as much twist as organzine.

In organzine, the thread is made from a series of continuous filaments taken from three to eleven cocoons. The threads are given sixteen turns of twist per inch in the first-time spinning, and then two threads from the first spinning operation are taken and given fourteen turns of twist in the opposite direction. This is called second-time spinning and it will make a thread that is strong and durable.

OTTOMAN: Heavy, plain type of silk fabric that has wide, flat ribs made of silk, cotton, or worsted filling. The ottoman weave is a diagonal rib effect made from a steep twill weave.

PAISLEY: Silk cloth made to imitate the designs seen on woolen or worsted Paisley cloth which originated in the Scottish city of that name. Used for dressgoods and accessories.

PANNE: French for plush. A satin-faced, velvet or silk material which has high luster made possible by tremendous pressure under rollers. Panne velvet is often referred to as panne and is a staple silk material.

PARACHUTE SILK: If the fabric is to be used by human beings, it is made of silk or nylon. Rayon is used if the fabric is used as carrier for bombs, cargoes, etc.

PEAU D'ANGE, ANGEL SKIN: A smooth, high texture finish given to some silk fabrics of crepe or satin which resemble, supposedly, the skin of an angel. This material is used for evening and wedding gowns. Always made on a 12-shaft satin weave.

PEKIN: A broad-striped silk dressgoods in which broad satin stripes alternate with white rep stripes of equal width.

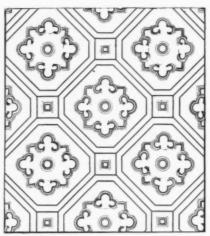
PIECE-DYED SATIN: To make this staple, a 50 reed is used, six ends per dent, or a 70 reed with five ends per dent, double. 20/22 denier raw silk is used in the warp, and a 62/1 spun silk is used in the filling. In silk, the cloth is called charmeuse; much rayon cloth of this structure is also used.

PIERCED COCOON: A cocoon that has been pierced by the moth coming through the wall. The short, resultant silk fibers have to be spun on the spun-silk system of making yarn.

PONGEE: Originally a Chinese silk cloth, tan or ecru in color, and very light in weight. Tussah silk was used and the fabric was woven on hand looms in the home; thus a rather crude, uneven textured material resulted. Pun-ki, the basic Chinese word for weaving in the home on one's own hand loom, gives rise to the present term, pongee.

to the present term, pongee.

Launders well, gives good service, not easily soiled. It is cool material for summer wear.



POPLIN: From the French, popeline. It is a staple, dressgoods material. The cloth resembles bombazine, and silk warp and woolen filling are used. In the higher priced cloth, worsted filling is utilized.

PURE DYED SILK: At the present time pure dye silk may be weighted with not more than 10 percent weighting, and in the case of black there is an allowance up to fifteen percent.

PUSSYWILLOW: A popular silk staple which is soft, thin, dull in appearance and gives good wear. This attractive cloth is used for dresses, blouses, and lining material.

QUILL: A bobbin upon which silk filling is wound. It is comparable with the shuttle and bobbin used in weaving cotton, woolen, and worsted. Quills are used on narrow looms in making certain silk and rayon fabrics.

1 1

RADIUM SILK: Lustrous silk fabric made with raw silk warp and hard twist tram filling, piece dyed. There are many constructions and some simulations of this cloth on the market. The cloth is light in weight, wears well, and is soft, thin and smooth.

RAJAH: Made of Tussah silk, certain silk wastes or man-made fibers, and belonging to the pongee family of fabrics, it is a popular summerwear cloth which is strong, rather compact and may have a pebble-like feel and appearance. Textures of this weave range from 70 to 80 x 50 to 60.

RAW SILK: Silk from the cultivated silkworm, Bombyx Mori, before the gum or sericin has been removed from the silk.

RE-ANIMALIZING: The weighting of silk by means of phosphate of soda which contains glue or casein.

REELING SILK: The converting of silk filaments into yarn in the filature. Also winding silk from the bobbin to the skein form. The work is done in the throwing plant.

RE-REELED SILK: Some Chinese silks receive a second reeling after the first one which has been done by unskilled native workers.

ROMAINE CREPE: Made from a plain, crepe or basket weave, this semi-sheer silk fabric is composed of fine yarn which affords a smooth surface effect to the goods. It has slightly more body when compared with triple sheer material. Somewhat on the order of alpaca crepe, the cloth shows a fine cross-rib effect brought about in the weaving.

ROPE SILK: A slack twisted, thick silk-ply yarn used for embroidery.

ROYALE: A plain ribbed fabric made of silk in which the ribs are broken at certain intervals.

SAMITE: Featured by the use of a six-thread silk warp, this rich, lustrous fabric is recognized by the use of gold or silver threads in the design. It has come down from the Middle Ages and is still used for ecclesiastical robes, vestments, ornamental fabrics, and some purposes of interior decoration.

SATIN: The name originated in China. Cloth made in a satin weave brings one system of threads to the face for the greater part of the time, whereas the other system of yarn will show on the back of the cloth, in an almost solid effect. Satin weaves are ideal to use in cloth for evening wear, where brilliancy and compactness of color adds to the effect.

When satins first came into prominence, the spelling of the term in Europe was acceptuin and the Italians, who developed satin cloths to a high degree of perfection, spelled the term zetain. This was further corrupted into zetin. Lastly, the English satin came.

Satin grey goods must be handled and in the 12th century. France has made the cloth since the 13th century, and English weavers wove this fabric as early as the 14th century.

Satin grey goods must be handled and treated very carefully. The cloth, as it comes from the loom, is not presentable. Silks are made in the finishing.

There is an almost endless group of satin cloths in the trade today. They all have points that resemble one another. A slight difference in any satin cloth will assure its being given a new name and place in the trade. Some of the more important cloths are: sateen, satin de Chine, de Bruges, de Lyons, double-faced satin, satin duchesse, Ture, taffeta, Sorrano, panne, messaline, merveilleux, Luxor, grec, crepe, canton, empress, etc.

SATIN BACK: A reversible cloth, fabric or garment whose back is made in a satin weave; the face of the goods may or may not be made in this weave,

SATIN DAMASK: A heavy, rich silk cloth made on the Jacquard loom, with fancy weaves and embellishments, or in a pile construction. Used for hangings and curtains. The other meaning of this term is the best quality of linen damask used for table linen.

SATIN FOULARD: A smooth, glossy-finished silk cloth made with a warp-effect satin weave. Printed with spots on a colored ground.

SCHAPPE SILK: Considered the same as spun silk in the United States. Technically, however, there is a difference because of the manner of removal of the gum from the waste silk which is often done by a rooting process of fermentation in manure.

tation in manure.

Formerly, all European systems differed from the English and the American methods. Now, all European silk of this type is classed as schappe silk.

The word schappe comes from the German-Swiss word meaning waste.

SCREEN STENCIL: A sheet of silk bolting cloth, in which a design has been formed with fine perforations.

scroop: The peculiar crunching or rustling sound noted in some silk fabrics. It is secured by treating the fabric with certain acids. Used in iridescents, petticoating, taffetas.

SERICIN: Soluble gum of the silk fiber which cements the two silk filaments together.

SERICULTURE: The raising of silkworms.

SERIGRAPH: A device to test for strength or tenacity, stretch or elongation, and the elastic limit or yield point. The test is done by the reeling of the proper length skein, weighing it for size, and then breaking the 100 to 400 parallel ends, depending on the yarn size.

SERIMETER: This machine will test one raw silk yarn for strength, tenacity, elongation and

SEWING SILK: Thread silk made for hand or machine sewing purposes, particularly the finer types. Made by twisting or plying sev-eral single threads together and doubling two, three or more of these in the opposite direction.

SHANTUNG: One type of silk material known by this name is similar to pongee with the same type of nubby surface. Now made of

Also a cloth made from silk waste which shows a very uneven yarn throughout.

SHIRT: Cotton muslin used on silk bales that come from Asia.

SHOE TOP SILK: Heavy silk cloth that has a figured design of rather elaborate nature. Twill or satin weaves are used. The warp is of expensive, fancy, novelty yarn and the filling is usually cotton. The fabric is substantial, rough and uneven in feel; gives good wear because of the manner of construction, and is attractive. It is used in footwear, chiefly for evening.

SHOT SILK: Term signifying the use of two differently colored sets of yarn, warp and filling, in order to give a changeable effect in cloth. Silk taffeta is often made in this manner.

SILK: The product of certain moths which are raised for commercial purposes to obtain the filament which will range from about 300 yards to about 1,600 yards. The middle third of the filament is even in diameter, the beginning and end are rather uneven, often split and coarse. The genus Bombyx and other genera of the Bombycidea family serve as the basis for the commercial yarn.

The cultivated member of this family is the Bombyx-mori or common silkworm. It feeds on mulberry leaves and their juices. The undomesticated silkworms belong to the Yama-Mai or other species and develop what is known as Tussah or Wild Silk. They feed on practically any type of leaf with which they come in contact.

The raw silk thread of commerce is made from five to ten cocoons (ten to twenty filaments). Each cocoon emits two filaments when spinning the cocoon. These are known as fibroin. A single filament is known as a brins.

The fibroin is cemented together, as it comes from the silkworm and emerges in the air, by what is known as sericin or silk gum. The brins, fibroin and sericin combined are known

SILK BATISTE: This fabric is sheer and diaphanous, comes in plain or figured effects, and may be woven with small dot-effects. Used for summer dressgoods.

SILK BOIL-OFF, BOILING-OFF: Also known as silk washing or silk degumming, it is the boiling-out of the silk gum or sericin from the silk fiber by means of soap and hot water. The amounts of boiled-off liquor vary with the several grades of silk; the higher the boil-off, the better the quality of the silk, the less the yield, and the more expensive the thread.

SILK, COMMON DEFECTS FOUND IN:

BROKEN PICKS: Filling that runs out on its course through shed of loom.

ENDS OUT: Warp threads that do not

weave in proper order.

FINGER MARKS: Caused by carelessness of the weavers when they work at the back of the loom; a weaver often stretches or moves the threads too much out of place and in so doing marks the yarns with his unclean hands.

HANGERS: These occur where the filling thread catches on a knot in the warp thread before the knot has reached the woven cloth area. This knot is pulled into the fabric by the reed, thereby causing the formation of a tight end; generally, an open V-shaped effect results.

LONG, LARGE FLOATS: Improper interlac-

ings between warp and filling yarns.
MISPICKS: Placing of the filling pick in
the wrong shed or the failure of the pick to go properly into the shed.

7. RIP-OUTS: Areas where the weaver has corrected an imperfection by the removal of a number of filling picks. Difficult to overcome since newly woven fabric has a tendency to show a rather mottled appearance.

SET MARKS: Heavy lines or marks across the width of the material caused by the filling picks having been beaten into the fabric too heavily.

SHADE: Off-shade, light or heavy areas noted in the goods.

SHIRES: Light marks that run crosswise, caused by a filling thread that was not properly beaten into place in the fabric.

SOILED ENDS: Caused by carelessness of the weaver whose soiled hands may have caused smudges to appear on the warp.

SHORT, SMALL FLOATS: One system threads floating too much over the other system of varn.

SILK FABRICS, TESTS FOR:

1. WEIGHTED SILK:

a. When burned, the silk will char and glow, but will hold its shape. The residue may be flecked off by the fingers

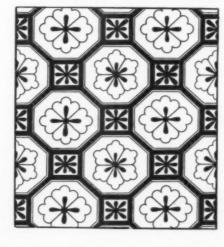
Heavily weighted silk will split when folded lengthwise.

2. NON-WEIGHTED SILK:

a. Pure dye silk will burn and give off the odor of burning animal matter. Small brittle balls form along the burned edge.

b. White silk will turn yellowish in a nitric acid solution.

A 50 per cent hydrochloric acid bath dissolves silk but not wool. Tussah silk



dissolves more slowly than true silk.

d. Silk goods will tear with a shrill sound; wool gives a dull sound.

A 5 per cent lye solution dissolves silk. f. Under the microscope, pure silk re-sembles a glass rod; Tussah silk has a greater diameter and shows fine parallel lines which are absent in true silk.

SILK GOODS:

1. PURE SILK GOODS: Those which contain nothing but pure silk. They are free from tin salts, lead salts, sugar, tannic acid and other adulterants. However, the term includes all silks, cultivated or wild, as well as material made of spun silk and silk wastes. See Silk Weighting.

2. ALL-SILK GOODS: No other textile fibers are used in making these fabrics which, however, may be weighted in both warp and filling. Some all-silk materials may have two-thirds adulterant and one-third silk fiber. These fabrics after short wear have the tendency to crack, rip, tear and disintegrate through excessive weighting.

3. SILK GOODS: Materials to which other fibers have been added in weaving the cloth after the yarn has been spun. The be of the mixture type or can be a ply yarn in which other yarns are used with the basic silk.

SILK NOIL: The waste from the last dressing operation in spun silk; it is often too short to be used again in silk manufacture. Noil is sold to cotton and woolen merchants who mix the stock with longer staple fibers for spinning. Fancy, nub and novelty yarns are often made with this noil in them. It adds brilliance to the yarn and often shows up in little balls or nubs in the fabric.

SILK CASHMERE: Silk fabric made on a 2-up and 1-down right hand twill weave that gives a soft, cashmere-like finish.

SILK SERGE: A 2-up and 2-down twill woven silk of high texture; used for lining fabric. It is usually finished at 24 inches and comes in all suitable colors.

SILK SKEINS AND BOOKS: Raw silk is packed 30 skeins to a book and there are usually 20 books to the bale; thus, most bales contain 600 silk skeins. Each bale approximates 130 to 135 pounds in weight.

SILK STOCKINGS, WEIGHT OF: This is determined by the number of threads twisted to-gether in the knitting yarn. The following table will give the range and use:

 One- and two-thread stockings are very delicate and should be worn only for formal occasions. Durability is sacrificed for beauty and sheerne

2. Three-thread chiffon, while heavier than one- and two-thread fabric, is not strong enough for more than formal wear.

3. Four- and five-thread fabric, known as semi-service or service fabric, combines sheerness with fair service for daytime use and gives good average wear.

4. Six- to twelve-thread fabric is called service weight.

SILK WEIGHTING: A process often used in connection with silk dyeing to compensate for the ss in weight because of the removal of the silk gum or sericin, or to increase the weight and consequently decrease the cost. Generally done with tin salts (stannic chloride) but tannin may be used for blacks.

SILK WINDING: Prior to testing silk for best grade, size, etc., it is run from skeins on bobbins. This winding test on raw silk is to determine the relative winding quality of the skein. Winding in silk is important since it shows the relative cost of winding silk from the skein form onto spools. The breaks per pound, per hour, at a defined speed, are recorded.

SILKWORM GENERATIONS: There are three types of silkworm generations:

1. Univoltine produce but once yearly. 2. Duovoltine produce twice a year. 3. Polyvoltine produce several times a year.

SINGLES: 1. Raw silk threads that may or may not be twisted; when twisted the threads have from 2 to 12 turns of twist per inch. Degummed silk may be woven in the singles, but it is not practical to do so.

2. A single or one-ply yarn; when two singles are spliced or twisted together, the yarn or thread is called two-ply.

SINGLES SILK: Term applied to all raw silk composed of a number of cocoon filaments united during reeling; usually five cocoons or

SLIPPER SATIN: A strong, compactly woven cloth used chiefly for evening footwear. Textures are high and the material comes in black, white, colors, or brocaded effects.

SLUGS: 1. An irregular, thick place in silk thread that is bulky in diameter. Slugs of this type are 3 mm., or one-eighth of an inch or more in length. Large slugs exceed 1 cm., or one and one-half inches in length.

2. Large, soft spongy places in silk thread caused by small pieces of waste that have become attached to the thread in reeling.

SOFT SILK: Silk with the sericin removed.

SOUFFLONS: Partially transparent silk cocoons, open in structure, and unfit for winding.

SPONGE SILK: Soft, porous, knitted fabric of low grade spun silk, used for underwear, draperies and polishing cloth.

SPUN SILK: Yarn made from true silk waste and pierced cocoons. The fibers are short and they are spun on the cotton principle. Degumming must occur prior to the spinning.

STEAM WASTE: Silk waste obtained chiefly from reeling mills in China, especially in the Canton area. Usually considered to be the best and most lustrous silk waste.

STOVEPIPE SATIN: A smooth, highly lustrous satin on the order of panne satin; used in making stovepipe hats.

STRASSE: Double silk cocoons made into silk waste in order to avoid reeling; the waste of silk throwing, it is a type of florat silk.

SULTAN: A silk cloth of India that is given a smooth, satin finish; may be white, natural, dyed or printed.

SULTANE: Twilled fabric finished in a rough surface effect; it is not singed or sheared. Name comes from Sultana, the first wife of the Sultan of Turkey.

SURAH: A soft, twill woven silk often made in plaid effects. If made of some fiber other than silk, the fiber content must be declared. Uses include neckwear, mufflers, blouses and dressgoods. Named for Surat, India.

TABARET, TABORET: A strong silk drapery and upholstery fabric made with alternating stripes of satin and moiré in different colors

TAFFETA: This cloth is supposed to have originated in Persia. The term means twisted woven. Always a staple fabric, it is in the same class and demand as satin. The cloth is made of a plain weave and the textures vary considerably. The pickage ranges from 70 to 130 or

thereabouts. Some popular taffetas include:
Faille taffeta: Taffeta woven with a twill
weave to give a pronounced crosswise rib.
Paper taffeta: Lightweight taffeta treated to

have a crisp paper-like finish.

Pigment taffeta: Taffeta woven with pi ment-dye yarns which give the fabric a dull finished surface.

Tissue taffeta: Lightweight and transparent.

THREAD SILK: A series of silk filaments which have been reeled and twisted together to add strength to the yarn in order to make the thread suitable for weaving, knitting, or sew ing purposes. It is neither spun nor weighted. Two-thread indicates 2-ply, five-thread, 5-ply.

THROWN SILK: Yarn made from raw silk that has been reeled from the cocoon. From three to twelve cocoons are necessary to make the commercial thread of today.

THROWING: While not exactly the same as treatments given to wool, worsted and cotton stock, throwing means the actual twisting, without drawing, of the continuous fibers or filaments of silk.

TIE SILK: Any silk material which is to be used for neckwear must possess the following quali-ties: proper weave and texture, pliability, resiliency, firmness in tying and knotting, lack of tendency to slip. Tie silk is generally skeindyed, and is not always fast to color; hence its use for cravat cloth only.

TRAM: In the woven trade, the term for filling yarn. This thread is twisted loosely, and is made by doubling two or three raw silk threads. They are not given the second-time spinning, as in organzine, that is used for silk warp. In the knitting trade, tram signifies the loosely twisted thread of pure silk yarn that is used for men's and women's silk hosiery.

TRAMMAGE: Silk produced in Northern Chinese provinces by the primitive methods. The yarn is uneven, and the term signifies the number seven, interpreted to mean that seven cocoons were used in making the yarn which would have 14 threads.

TUB, TUBBABLE SILK: Washable silks used for summer wear. The term originally implied gray goods, or cloth as it came from the loom.

TULLE: Sheer silk cloth with hexagonal mesh, stiff, used much in ballet materials. Cool, dressy, delicate, and difficult to launder. In dressgoods it is a stately type of material. Also known as silk net.

TUSSAH SILK: Sometimes called wild silk, it is the product of the uncultivated silkworm, which feeds on leaves of the oak tree, castor oil plant, cherry tree, and uncultivated mulberry tree. Little care is given to the raising of these worms, whose product is a sturdy and rather tough silk fiber. Tussah is easily reeled but it is not as soft as true silk. Shantung and similar weaves are made of Tussah,

TUSSAH VELVET: Tussah silk is much used in velvets. The coarse yarn is ideal for the pile effect in this durable cloth which drapes well, withstands hard usage, and will clean but crush. Since tussah silk dyes well, it may have many uses as a substitute for true silk in pile construction cloths.

UMBRELLA SILK: A plain taffeta or twilled cloth made with a fancy selvage and used for umbrellas and parasols. Much umbrella silk is made with cotton filling in the cheaper grades. UNION SILK: Used for umbrellas, the material is made of cotton warp and silk filling.

UZEN WASHABLE SATIN: A rugged silk dress goods fabric made in place of this name in Japan; exported to many countries and popubecause it withstands rugged wear and washes easily and well.

VEGETABLE SILK: Loose term for the lustrous floss or down from the pods of kapok, milk-

VELVET-SATIN: Satin weave is used as the base for this luxurious, figured silk, made with cut-

WASTE SILK: The short, unreeled filaments that are left before and after the long cocoon filaments have been removed. These short noils are carded, sometimes combed, and spun.

WATT: A low quality, uneven silk waste.

WILD SILK: Silk furnished by the larvae of wild silkworms; another name for Tussah silk.

WINDER'S WASTE: In silk it is the waste obtained in winding raw silk on bobbins. Used in making spun yarn. The term is also applied to waste from winding of any textile yarn.





Each new discovery . . . whether it be the wheel, steam



or calculus . . . helps to carry our civilization forward

DYNEL . . . A MOST AMENABLE FIBER

In this continuing report on the new Acrylic Fibers it appears that the unique characteristics are easily bent to virtually unlimited purposes

In the previous report on Dynel, the basic properties and some of the potential end uses of this new acrylic fiber were enumerated. While it is not yet ready for widespread commercial use, due to both limited production and continuing development work, it is already apparent that Dynel is by far the most versatile and the most tractable of the chemical fibers which have become so integral a part of the American textile economy.

It should be understood that Dynel is neither the only, nor the first, acrylic fiber. Orlon filament is already in the consumer's hands; Chemstrand is awaiting the construction of a manufacturing plant. But even though Dynel is just entering the stage of commercial use, it has been successfully worked into enough types of merchandise to prove without question that it is practical and well nigh unbounded in the variety of its possible end uses.

Searching for one word which clearly describes the nature of Dynel, we selected amenable; for this is a staple fiber which permits itself to be spun and processed in such a broad variety of types and constructions that all one apparently needs to do is suggest an end use . . . and Dynel lets itself be shaped to that end. As will be observed from the

(please turn the page)



For blankets: made of 100% Dynel by the Fieldcrest Mills Division of MARSHALL FIELD.



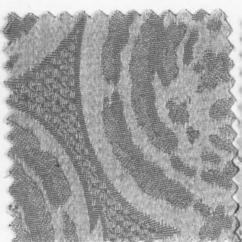
A tricot fabric: for apparel for men, women, children; all-Dynel, by WILLIAM WINKLER.

Dynel Flexibility Crosses

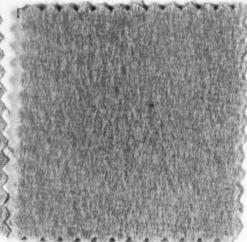


For industrial uniforms: a twill made of 100%.

Dynel fiber by SUSQUEHANNA MILLS.



Another drapery and upholstery fabric in jacquard weave: all-Dynel, by J. H. THORP.



Crib blankets; also in suitable weight for military blankets: all-Dynel, by PEPPERELL.

The numberless variations in the finish and feel of Dynel enable mills not only to produce fabrics which duplicate the appearance, hand and char-

Dynel . . . continued

numerous fabric swatches on these pages (and they represent but a random handful selected from a great number already in the weaving machines, not to mention many more in the preparatory stages) Dynel is so completely flexible that it permits the weaver, finisher and manufacturer to give free play to his creative imagination. For instance:

Dynel has such covering power that it can be woven into a wonderfully warm blanket; yet it can also be spun fine enough to make a cool and porous sportswear or drapery fabric. Its resilience permits unusual loft in the surface of a fabric; but it can also be processed to permit the weaving of a satin jacquard effect. Wet or dry, Dynel has excellent tensile strength; cold damp, mildew and fungus have no effect on the fiber. Moths starve to death on it; acids and alkalies meet strong resistance; combustion is not supported.

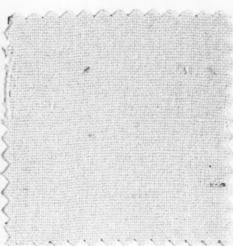
To go further in the repertory of Dynel traits: the fiber dries speedily; it has never caused allergy reaction; it takes every hue in the rainbow clearly. Yet the fiber which contains so many excellent characteristics and opens so many horizons

(please turn the page)

All Fiber Boundaries



Unusual basketweave construction, for draperies: all-Dynel, woven by Shamokin MILLS.



Homespun weave: ruggedness with characteristic hand; all-Dynel, by U. S. ROYAL FABRICS.



Circular-knit fabric: indicating the versatility of all-Dynel. By PRINCETON KNITTING MILLS.

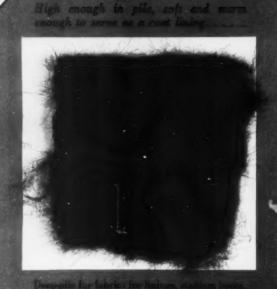
acter of other fibers...but to add virtues they do not ordinarily possess. Would you know these fabrics to be 100% Dynel with your eyes closed?



DYNEL WILL NOT SUPPORT COMBUSTION
(but it will not stand intense heat)

If you hold a lighted match to a strand of Dynel, you will note that the fiber shrinks away and chars where the flame strikes, but no further. Because Dynel fabrics are set under moderate heat, permanent creases and pleats are possible. On the other hand, because it shrinks under intense heat, it is impractical at this time to weave all-Dynel cloth for merchandise which may be subjected to a hot iron or too great steam pressure in ironing. Blends will withstand heat to the limit of the other fiber in the blend.





The versatility of Dynel Fabrica is as broad as the range of uses

At the top of the column we present pile fabric with all of the softness and lush feel of a fur; it is knit by Borg, for use as a lining and trim of coats for men, women and shildren.

At the bottom is shown a swatch of duck fabric by Wellingto Sears; this is a fabric with the chemical-resistant qualities need to withstand attack even from correspondents.

Yet both are made outirely of Dynel fiber. When we consider these extremes, and the other specimens of Dynel weaving shown in this report, it is understandable that mills should credit Union Carbide and Carbon with having contributed and of the chemical fiber industry's outstandingly valuable executions.

perform as an outdoor cloth.

to the textile industry is identical in origin to the can of Prestone anti-freeze you poured into your car radiator last winter! It started with the same core of chemical elements, went through many of the same processes . . . and then split away to undergo special treatments to become Dynel, the new acrylic fiber.

A short resume of the history of the operations by the Chemicals Division of the Union Carbide and Carbon Company suggests how this company came to develop Dynel: In 1929 UCC first began to produce synthetic acetone, which is the solvent used in spinning cellulose acetate rayon; the next logical step, in 1933, was the manufacture of acetic anhydride to acetylate cellulose for acetate rayon. The following year UCC instituted serious textile fiber research in connection with vinyl resins and 1936 saw the introduction of the first fiber based on vinyl chloride.

Ten years later, in 1946, the end of World War II freed UCC's chemists for further textile fiber research and they brought out the first continuous filament yarns based on vinyl chloride and acrylonitrile; this, which was announced in 1949, was the forerunner of Dynel, for which a commercial plant was constructed in 1950.

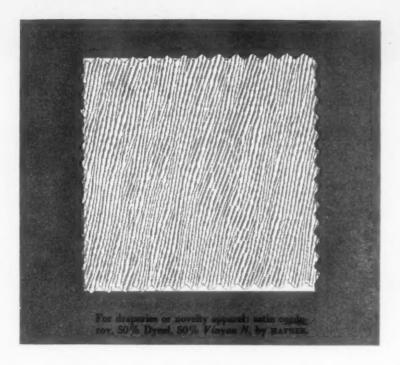
At each step of the development program, UCC worked with the best brains in the textile industry and heeded their suggestions; experimental fibers were produced for virtually every type of end use from blankets to swim suits, from men's socks to industrial uniforms, from drapery cloths to gloves . . . even for doll wigs!

The most arresting quality of Dynel, however . . . and its strongest point of recommendation to mills . . . is that whereas some chemical fibers might be limited in their sphere of use by the fairly rigid nature of their characteristics, in the case of Dynel the spinner, weaver or knitter is given almost a blank check with which he is invited to work toward the finished qualities which are most highly desirable.

At the moment, the production of Dynel is still limited; but the list of possible uses grows hourly, and there is apparently no end in sight. It is a case where the intrinsic qualities form a universal foundation which any textile architect can use; on top of that, he can manipulate and add or eliminate any of the special features he needs to build a perfect structure, whether of 100% pure or of blended Dynel.

In this report we illustrate only a small portion of the many diversified types of fabrics which are already being produced with Dynel fiber, but their wide diversification will indicate that Dynel, the new acrylic fiber, is amenable to a remarkable degree . . . much wider even than this report indicates.

for stages in the development of Dynel please see the following pages . . .



DYNEL IS A GREGARIOUS FIBER It Blends Smoothly

AGAIN DUE TO the versatility of this acrylic fiber, Dynel has been successfully blended in numerous percentage-mixtures with other of the important fibers. The surface characteristics, the hand and the dye affinity are so completely controllable that in many instances it is almost impossible to tell that Dynel has been blended with another fiber except by chemical analysis.

This natural affinity has enabled mills to attain cloth constructions which are unique because, while they retain the marked character of the initial fiber, they assume the added advantages which reside within Dynel. In a man's suiting, for instance, the mill can fend off consumer resistance to the high price of wool by blending Dynel with viscose rayon and acetate

The fabrics by Shamokin Mills, J. H. Thorp and Hafner finished by Cliffside



A cloth for topcoats and sport coats: Dynel, viscose and acetate blend from ROBBINS MILLS.

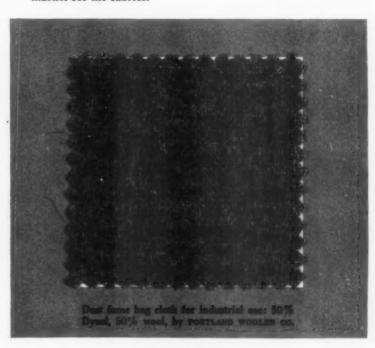


Men's and women's herringbone suiting: Dynel, cotton and nylon blend, by BATES FABRICS.

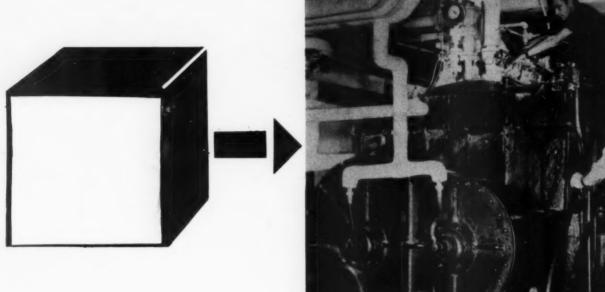
rayon; the end product has the wrinkle-resistance and soft hand which impress the consumer, greater durability than viscose rayon . . . and a price within his reach.

Another mill finds it possible to reproduce in a cotton-and-Dynel blended fabric a number of fashion successes in the suiting field; a nappy surface and hand are reminiscent of wool, the fabric is completely washable, and Dynel's dyeaffinity makes it possible to style the line in clear, brilliant colors for fashion requirements.

What the mill has at hand is the opportunity, through permutation and combination, to intermingle the desirable characteristics of any important fiber with those of Dynel; sometimes the requirement is for a softer hand or a harder surface, sometimes there is need for a cloth with the sheen of a jacquard and the sun-resistance of bleached cotton. Sound technological engineering of Dynel's innate properties has already solved many problems such as these, and can resolve many more for the weaver with an eye to a potentially valuable market for his fabrics.



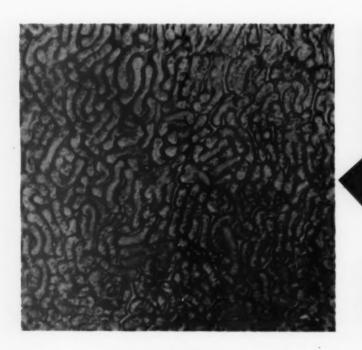
Eight Key Stages in the Development



1. RESIN FOR MAKING DYNEL
Resin from which Dynel is made. This is compounded from vinyl chloride and acrylonitrile, synthetically made from salt, natural gas, and air.



2. PRODUCING THE BASIC SOLUTION
The Dynel resin is first dissolved in acetone, using batteries of large dope mixers such as this, to produce the solution that is the basis of Dynel fiber.



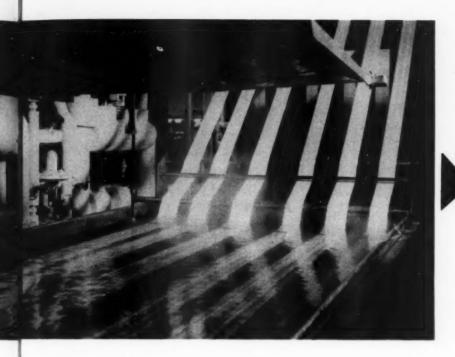
8. UNDER THE MICROSCOPE
Dynel fibers magnified 500 times. Their ribbonlike irregularity provides high covering power and heat is retained by the air spaces in Dynel fabrics.



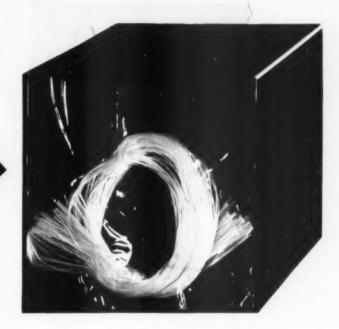
7. SPINNING THE YARN In the hands of the spinner, the staple is twisted and drawn into yarns. The yarns may be satisfactorily spun on any system.

of Dynel Fiber . . .





3. THE EXTRUSION PROCESS
From the spinning bath, the Dynel solution is extruded in this manner, to form a tow composed of many strands of lustrous fiber, in filament sizes of 1.5, 2, 3, 6, 12 and 24 deniers.

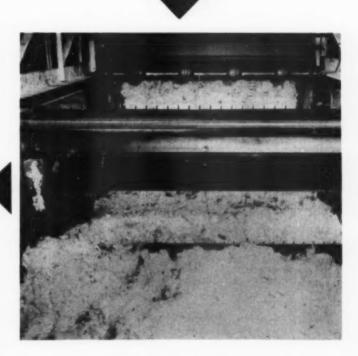


4. SAMPLE OF DYNEL TOW
After it emerges from the extrusion process, the tow is cut in specified lengths of 13/8 to 6 inches. The tow sampled here is 2-denier filament.



6. BALING THE FIGER

The Dynel staple fiber, ready for shipment, is baled in huge baling presses, then enclosed in cardboard cartons. Each bale contains 300 pounds of fiber.



5. CRIMPING THE TOW

The cut Dynel tow is then crimped in the machine shown. This causes the fibers to hang together well, and makes Dynel easily spinnable.



THE IMMINENT HEARINGS before the Federal Trade Commission will, it is sincerely hoped, terminate the existing order which compels the user or producer of several different types of fiber to identify them all as rayon. There are two excellent reasons why the order should be rewritten, and why this should be done at once.

First, there is as much difference between an acetate and a cuprammonium or viscose fiber as there is between an oak tree and a pine, or between cotton and wool; and under the present regulation which lumps all of the fibers together under one generic name the government itself is guilty of compounding confusion with error.

Second, everyone from the manufacturer to the consumer of finished goods is completely befuddled. Because all cellulosic fiber producers are required to use the word rayon in conjunction with their individual trademarked names, they lose the opportunity to make clear the physical differences and characteristics which are embodied in their fibers; and so the end user naturally expects that since all of the fibers are rayon, at least in name, they possess the same properties, and that merchandise woven from any of the rayon fibers will stand up the same way under the same conditions.

Nothing is further from the actual truth, as the veriest apprentice in the textile industry knows. If all of the fibers were identical in character and performance, then the important chemical companies which produce them would be selling their products on the basis of price mainly; and indeed there would be no valid reason for complaint against the FTC's regulation. But the obvious and undebatable fact is that the development of different types of fiber from the laboratory stage to a multi-billion

dollar industry was the direct result of the differences among the numerous fiber characteristics and properties; it is only because Teca is entirely different from Bemberg and because Celanese is different from Avisco viscose rayon that the weavers of fabrics have been able to find such increased use for all of the fibers,

The very least which should result from the coming open hearing by the Federal Trade Commission is a division of these fibers into the two major classifications of rayons and acetates. Once the user is afforded this form of protective information, he will know what to expect from each fabric and how to treat it to gain utmost satisfaction; after that, it is up to the individual company which produces any of the fibers so to merchandise and promote his product that he can gain a fair portion of the available market.

No architect would design a paneled library which called for walnut, a stairway which required oak, and a pingpong table which needed balsa... and then send the builder to a lumber yard with orders merely to buy wood. Just as truly, it is wrong to tell the manufacturer, the retailer or the consumer to buy a man's suit, a woman's evening dress, a pair of livingroom draperies and a swim suit... all under the one label, rayon.

Under its mandate the Federal Trade Commission has the responsibility of making things clear . . . and safe . . . to the American public. This is one case which calls for definite and immediate clarification; and we hope that the hearing will result in speedy action to bring each of the fiber groups within its proper nomenclature. Let rayon be called rayon, and acetate be called acetate; then confusion will end, and the public will be best protected.



1. The Duffle coat is worn by Mr. John Richardson, while Mr. Ilay Campbell wears cavalry twill trousers with the solid color waistcoat so much in vogue.



4. A Crombie overcoat with an imitation sheepskin lining is shown here worn by Mr. C. Weatherby. The trousers are of cavalry twill, seen so often on well-dressed men. Is a revival of this fabric coming?



3. Mr. David Metcalfe wears the reversed sheepskin three-quarter coat. In center, Lord Rupert Neville in a British warm over Glen Urquhart check trousers.



★ TEXTILE FASHION FLASH: WATCH FOR CAVALRY TWILL REVIVAL!

MURDOCKE REPORTS on OXFORD'S BULLINGDON RACE MEET

OXFORD'S BULLINGDON RACE MEET which in the past has set many styles for the college world places emphasis on (1) the Duffle Coat, both full-length and short; (2) sheepskin-lined three-quarter coats; (3) the solid color Crombie lined with sheepskin; (4) the British camel coat longer than the military model in tan, beige, navy and brown; (5) cavalry twill trousers; (6) tweed cloth caps worn flat and full fronted. The photographs tell the story. The possibilities of the Duffle Coat, as seen at this race meet, are enormous; the same can be said of the reversed sheepskin and the Crombie lined with imitation sheepskin. The extraordinary popularity of the cavalry twill trousers is noteworthy. These may eventually oust flannels, even though more expensive. Bullingdon may well have produced the greatest galaxy of new ideas seen in England since the war.



6. Mr. Tom Hearn wears cavalry twill trousers, solid color waistcoat, and brown and white check tweed jacket.

7. Mr. Martin Stevens, one of Oxford's best-dressed men, and Mr. Dale-Harris wear the new type British warm. Note shoulder straps for non-military wear.

5. Mr. John Beevor wears a new adaptation of the jacket-length Duffle coat. This version has the same full back and the hood, but the sleeves are quite plain.

2. A Duffle coat in light camel is worn by Mr. W. G. Oliver. Note the Creed highly checked overcoat with raglan sleeve and turnback cuff. Note caps worn.







letters to the editor

NAVY DEPARTMENT WRITES

To THE EDITORS:

I have just had brought to my attention Mr. Ketcham's excellent article, The Art of Camouflage, in the winter number of AMERICAN FABRICS. I am requesting your permission to reprint the article in a future issue of the U. S. Navy Civil Engineer Corps Bulletin . . . circulated to approximately 12,000 Civil Engineer Corps officers, both reserve and regular. Several officers here in the Bureau of Yards and Docks recall Mr. Ketcham and the work he did for the Bureau and the Corps during the war.

Harry William Holzhauer Editor, CEC Bulletin Navy Dept., Washington

ON CREATIVE STARVATION

To THE EDITORS:

. . . We are now actively building our new lines and believe you me, it's no picnic! Many mills seem to think that with the assistance of Uncle Sam they'll be able to run their output on one or two staple constructions . . . and if it's one, instead of two, so much the better. The few who are willing to experiment with something new are doing so defensively with the thought that under price control they might be able to get a better profit on a new novelty than an old staple. I'm sure that your articles on *Creative Starvation* will help to shake a few of them up; but as you know, mill men are apt to have pretty thick hides.

Congratulations on an effort in the right direction.

George E. Pretzfeld Custom Fabrics, Inc. New York City

CLAN TARTAN CRITICISM

TO THE EDITORS:

May I express to you my appreciation for the very fine material which appears in every issue of AMERICAN FABRICS magazine. It represents much thought and careful research to assemble so much authentic information on the textile field and industry.

I thought you might be interested to know that I am using it as reference material for my students at Wayne University. In this way Art students, Home Economics and Occupational Therapy students all have the opportunity to see and discuss what is most suited to their main problems. Art students like especially the fine illustrations and advertising layouts; Home Economics people enjoy the samples of fine fabrics, and trends in the fashion field which you publish. We are sure through the pages of your fine magazine you must exert

a great influence which finally will reach the ultimate consumer through the great and powerful textile industries. Because of this important influ-

Because of this important influence, may I ask why it is necessary to go back to Clan Tartans of Scotland for design inspiration and promotion? We live in the 20th Century, not the 10th. Today we have the most wonderful collection of different kinds of threads the world has ever known. And these are just waiting for the magic touch of the creative imagination of modern designers and artists. We are indeed in a sad state of Creative Starvation if we have to revert to past ages for designs for textiles to wear and use in the age of radio, television, automobiles, and all of the other technological developments of our present-day machine age.

machine age. In our humble opinion there is absolutely nothing creative or new in copying a recipe for Clan Tartan designs for present-day use. We are sure there must be many fine textile designers creating modern patterns and designs. Wouldn't it be possible for AMERICAN FABRICS to search out some of these people and promote their work? Our Art Schools all over this country have many young people being trained for opportunities to create designs. An AMERICAN FABRICS magazine promoting modern textile designs and uses of modern threads would certainly be thrilling to those of us who like to think in terms of today's living and needs.

Thanks for your fine covers by artists like Dali, Steinberg, etc. Nellie Sargent Johnson Detroit, Michigan

VISITING TEXTILE ENGINEER

To THE EDITORS:

Your famous AMERICAN FABRICS is indeed of great help to me to get a better view of the American textile products.

Harry W. Tijben Textile Engineer The Netherlands

A VALUED GIFT

To THE EDITORS:

There are three of my Christmas gifts which I prize above all others . . . the complete recording of Rigoletto, a pair of hand-wrought silver cuff links, and a year's subscription to AMERICAN FABRICS . . . but easily the one I will appreciate the most throughout the year is the subscription to AMERICAN FABRICS, undoubtedly the most beautiful and interesting magazine I have ever seen.

James Gilmore Evening Republican Columbus, Indiana

FROM BRITAIN ON CLAN TARTANS

To THE EDITORS:

... In the editorial matter on Clan Tartans, I think some protest might be lodged against the mistakes made on the subject. . . I shall not here give a detailed analysis of the whole, but can refer to one or two things which hit me with a jar. Inside the front cover I read In Scotland the Tartan became an integral part of the Scot-tish National Dress, and the glorification of the Clan System. You confuse Scotland with the Highlands. There always was latent or open hostility between the Low-lands and the Highlands, and the majority of Scotsmen never wore a kilt in their lives. The kilt was only the dress of the Highlander and the other tartan trimmings were left for semi-fancy dress af-fairs, and later for the exploitation of tourists. Five pages later you suggest that the popularity of tartans at this time is in some small measure due to visitors to the Edinburgh musical festival seeing the magnificence of Scottish Highland dress as worn by men, women and children. That may be so, but there is no Highland dress for women, not even in the Highlands in this or any other century. A woman might wear a piece of tartan cloth as a shawl, and they do wear tar-tan sashes at Caledonian Balls, but the kilt is a man's garment only. The kilts worn by women today are just pleated skirts made from tartan cloth, but they are not kilts. As is revealed, for example, in your photograph of John MacKay Adan and his daughter. I suppose your editorial consultant thought everything was all right, but poor Scotia merely looks ridiculous. The silly hat reminds one of an embryo air-hostess; her kilt is far too long, and so are her stockings. A tartan tie is not worn in Scot-land. A dark jumper should be worn with tartan. Mr. Adan's garb is just as bad. His kilt is too long, or else his stockings are ridicu-lously long (one cannot find his knees) and no Scot would dream of wearing tartan stockings with day dress. Nor, for that matter, does any civilian wear a bonnet of that type except on the music hall stage. I trust that he and Scotia were more decently garbed when they went around Scotland. . . .

H. A. Hartley London

Mr. Adan is a Scotsman and his costume as well as Scotia's were made in Scotland. As for adapting Clan Tartans for American jashions, to meet American tastes, Scottish tartan patterns were themselves adapted from earlier sources.

WILLIAMSBURG DECOR

To THE EDITORS:

In the winter issue of AMERICAN FABRICS, on page 22, there is an advertisement of Scalamandré Silks, Inc. reproducing the small dining room of the Governor's Palace at Williamsburg. I am interested in securing the names of the shades of paint used on the walls and venetian blinds in this picture.

Dr. H. Hofmann American Bemberg Elizabethton, Tennessee

All information concerning the furniture and paint colorings in the buildings at Williamsburg will be gladly supplied by Mr. John Upshur, Curator of Craft House, Colonial Williamsburg, Virginia.

RESEARCH IN RAYON

TO THE EDITORS:

A course that I am taking at Michigan State College requires that I write a research paper on Rayon as a Synthetic Fabric. Through my father, Mr. E. D. Patton, a buyer for the J. L. Hudson Company, and a subscriber to AMERICAN FABRICS, I learned I might obtain information on this subject from you. Jerold L. Patton

East Lansing, Michigan A comprehensive article tracing the background and development of rayon was presented in issue No. 3 of AMERICAN FABRICS.

QUERY ON MEISEN SPOT-DYEING

To THE EDITORS:

In your issue No. 15 there was a page devoted to the Meisen Method of spot-dyeing the warp. I follow that correctly, but what or how is the weft dyed?

I am just an amateur in my weaving, but I would appreciate knowing what the method was. According to the effect achieved, I am sure there was spot dyeing on both.

Elizabeth Zur Welle

The same procedure that was followed for the spot-dyeing of the warp yarns is followed in the case of the filling or west yarns.

INTEREST IN PROTEIN FIBERS

To THE EDITORS:

I am writing a term paper on Aralac and have looked through several sections of your magazine in an attempt to obtain such information. So far I have been quite unsuccessful. Could you tell me if any articles relating to this subject were printed in your magazine.

Margaret Unguarsky
Briarcliff Manor, N. Y.

Aralac is no longer produced. An article on the widely used protein fiber Vicara appeared in issue No. 13 of AMERICAN FABRICS.









Key-Chords

A group of distinctive twills accented with the harmony of contrasting color tones.



Patterns in the lower register of the color scale

- a variety of rich, darker shades.

Symphony

Medley

Fine, crisp Gabardines, Sheens and Twills to strike a new note in profit potential.



Flumage Hues

ENCORE! A return engagement after a highly successful season. They star new, delicately shaded colors, greater variety, new appeal.

Music

for the

3016

for the

Eyes

oncertones

Bachmann Uxbridge proudly introduces a brilliant quartet of fabric masterpieces in worsted and nylon. These miracle suitings — composed of 15% nylon, 85% worsted — are stronger, look finer, and possess amazing long-wearing qualities. Striking a resounding new chord in men's wear, CONCERTONES remarkable characteristics will reach a high note of profits for you.

FREE: Swatches of CONCERTONES and a list of apparel manufacturers featuring CONCERTONES will be mailed on request.



BACHMANN UXBRIDGE WORSTED

CORPORATION

257 FOURTH AVENUE, NEW YORK 10, N.Y.



USING THE PROPER FABRICS IN DEFENSE CAMOUFLAGE



America's defence effort will entail more camoustage protection for industrial plants than during World War II, and the fabrics industry will play a vital role in supplying material for nesting and net garnishing cloth, reports Howard Ketcham, AMERICAN FARRICS' Consultant Editor on Color and Design. The needs of this program will call for development of substitute materials and new supply sources. Requirements to participate in the program for industrial and military camoustage de

times are detailed out of Mr. Ketcham's specialized experience in this field during and since World War II. He was responsible for color development for camouflage planning in the Navy's shore installations, and for an inter-service camouflage color standardization plan. He also produced a motion picture on camouflage application for the Office of Strategic Services.

-THE EDITORS

In his memoirs, Winston Churchill thus described the value of effective camouflage to achieve complete tactical surprise for a desert campaign: "The enemy suspected an attack was impending. Camouflage kept him from knowing where, when or how."

The contribution of America's fabrics industry to improve camouflage protection lies in two classifications of product: (1) NETTING, used to conceal factory installations, field installations, equipment and personnel; (2) Inexpensive CLOTH STRIPS (of great durability under outdoor exposure) to garnish the nets, to make the netting-covered area appear to be an undeveloped area similar to the natural surroundings. Approximately 60 per cent of the netting surface is typically covered by the cloth strips woven into the net mesh.

The Five Basic Types of Netting

1. FISH NETTING.

Many manufacturers of fish nets and lace converted production facilities to making camouflage netting during the last war, including such firms as Liberty Lace and Netting Works, North American Lace Company, the Wilkes-Barre plant of Columbia Mills, Inc., and Scranton Lace Company.

Looms capable of simulating any type or size of fish nets, in addition to a wide variety of special net designs, with varied mesh size, are available. Lace machines can weave nets six yards wide. Many of the nets produced on lace looms require no garnishing with cloth strips, because their compact construction provides adequate concealment.

During the last war 2½" square mesh was commonly used for netting. The larger size mesh requires more garnishing; a four-inch mesh requires four times as much as a two-inch mesh. One of the most popular sizes of nets was 14' x 29'; other sizes commonly used included: 12' x 12'; 15' x 15'; 36' x 44'; 22' x 22'; 29' x 29'; 45' x 45'; 17' x 35'.

Among the typical weights of netting were: 14' x 29', 5 pounds; 17' x 35', 7 pounds; 29' x 29', 11 pounds. Today machinery makes a netting that can be substituted for the knotted net.

Netting requires sufficient strength to bear snow loads as high as 40 pounds per square foot in Maine, New Hampshire, Vermont, Northern New York, Wisconsin, Minnesota, Michigan, the Dakotas and Montana.

2. mosquito netting

Mosquito netting was employed to conceal personnel, since a single

soldier can be detected from a plane 3,000 feet in the air. A small net can be used for individual concealment against enemy ground units.

3. TWINE NETTING

Twine netting is effectively used, in flat-top position, to hide planes on the ground, for example. The twine (No. 18-18 thread, medium laid) is tarred and chemically treated, woven diagonally, cut obliquely, and taped around the edges to pull the meshes square. Since any sagging of the net causes a shadow, the netting is set up to avoid sag, and this is accomplished when tension from the side supports of the net pulls the meshes straight. Fiber nets of shredded yucca cactus provide a ropelike cord net which does not need garnishing, and which provides ideal texturing for large flat concrete areas such as airport runways or factory parking lots.

4. SHRIMP NETTING

Shrimp netting for temporary camouflage, offering all the desired qualities but strength, can be made of tightly-woven strands of especially impregnated, strong paper. These can be made on such lace-making machines as Levers, Raschel, Torehon and Nottingham.

5. POULTRY FARMERS' HEXAGONAL MESH WIRE

Poultry farmers' hexagonal mesh wire (No. 20 gauge, galvanized) has been adapted through redesign for camouflage netting service. The advantage of wire netting is that it does not deteriorate with use, and is suitable for established military positions and factory camouflage.

How Hand-Woven Netting is Made

During the last war the armed services trained personnel to prepare fish-netting in the field for emergencies, and to counteract problems of field distribution or destruction of supplies

field distribution or destruction of supplies.

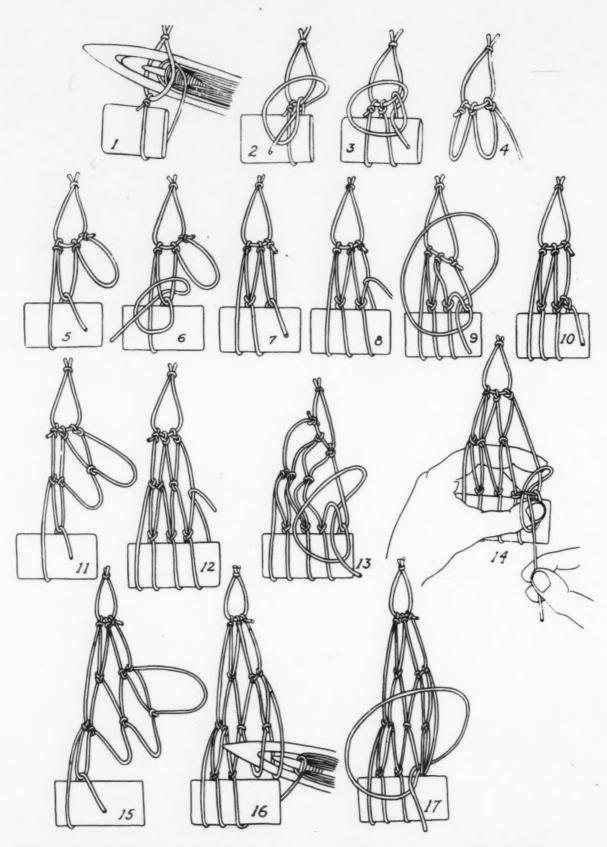
In any all-out future emergency, the facilities of manufacturing plants can be supplemented advantageously, if needed, by tapping a manpower pool never yet used profitably in our defense efforts . . . residents of certain types of institutions who can be trained for hand-weaving of simple netting, as used through the centuries in making fish-nets.

The weaving process employed by fishermen in making their nets is applicable in making camouflage net. This is based on the so-called weaver's knot (sailors call it the *sheet bend*) which may be tied in less time than any other knot used for the purpose of tying together two

ropes or strings.

The first step in tying the weaver's knot is to cross the ends of the

(continued)



The foundation loop, netting needle and mesh stick are shown in Sketch 1. Net two loops on the foundation loop, as per Sketches 2 and 3; the completed result is shown in Sketch 4. Sketch 5 shows the same, with the foundation loop turned over, and the end of the string drawn over the mesh stick to continue netting. In Sketches 6 and 7, the continuation process is shown; Sketch 8 shows how additional loops are formed by going through the same loop twice. Sketches 9 and 10 illustrate the process known

as increasing. In Sketch 11, the foundation loop is turned over, and the netting process is continued as per Sketches 12 and 13. Sketches 14 and 15 show how to manipulate in forming the knot on top of the mesh stick. To maintain width, keep the number of meshes equal in each row by netting the last two loops together (decreasing the length one mesh) as indicated in Sketches 16 and 17. On the next row increase by one mesh, as shown in Sketches 13 and 14. Repeat and alternate this process.

strings, crossing the left hand end over the right end, holding them in place with the left thumb. Second, turn the standing part of the right hand string around its own end. Third, lay the left hand down and over the standing part of the right hand string and through the loop, holding this portion in the left thumb and fingers to keep string in position. Fourth, pull the standing part of the right hand string taut.

This forms the weaver's knot, with both ends of the string on the

This forms the weaver's knot, with both ends of the string on the same side of the knot; if the ends are on opposite sides, the knot has been made incorrectly and may slip and perhaps come apart entirely.

Using Nets and Garnish to Blend Surfaces

Netting serves as a base on which garnishing materials can be placed to blend a factory or military installation, or military equipment, with surrounding areas. Since shadows are a give-away of concealment, large nets such as might spread over a plant area will require planning to reduce telltale shadows. Terracing the nets on three sides and draping the fourth serves to create fewer shadows.

Garnishing is the camoufleur's tool to make the netting an effective means of concealment. Garnishing cloth employs color to assure that the disguised area blends innocently with adjacent terrain. The color effect desired is obtainable by combining pigments where garnishing cloth is to be painted (or dyed), and by relying on visual blending. The latter process is similar to the effect of the Sunday color comic pages, whose tiny dots of basic colors blend into the colors the eye perceives. For example, the service-specified summer color for pre-garnished netting is obtainable by using 70 per cent of garnishing cloth in the service Dark Green standard, and 15 per cent each of the Field Drab and Light Green; even to the spotter in a low-flying plane these resolve themselves into the appearance of a single color.

The preferred weight of garnishing fabric is 6.8-ounce Osnaburg cloth or 7- to 10-ounce jute burlap. These weights are not rigidly adhered to in service purchases, however, under the directives in the pertinent specification, and in providing a camouflage garnish for industrial plants there is greater leeway of course.

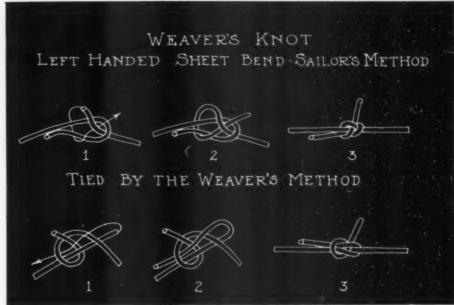
Flat-top net surfaces should have about 80 per cent covering with garnishing materials in the center, thinning out toward the edges. Some nets are made pre-garnished, but in most cases, for convenience of shipment and to insure accuracy in selecting colors and textures which are suited to surrounding areas, the garnishing is done in the field with carefully-selected materials.

Pre-garnished nets can be prepared in colors suited for summer, winter, or desert camouflage concealment. They are prepared in two types — flat-top and drape. The shrimp net type is the most practical drape net and does not require garnishing.

CAMOUFLAGE CLOTH STANDARDS

Performance requirements include:

- Weight increase of not more than 55% over the untreated cloth.
- 2. Non-solubility of compound in water.
- No loss in flexibility or tensile strength from the compound.
- 4. After 300 hours' weathering, the Osnaburg must lose no more than 30% and the burlap no more than 70% of tensile strength.
- Loss of tensile strength not to exceed 30% under heat test.
- Self-heating of fabric must not exceed 220 degrees Fahrenheit under heat test.
- 7. There must be no excessive dusting.
- Folds of the treated fabric must not adhere to each other under tackiness test.
- 9. Treated fabric must be mildew-resistant.
- Treated fabric must be flame-resistant so that a burned hole, under flame-resistance test, will not exceed 2½ inches in diameter.
- Processing must not materially affect the flexibility of the treated fabric.
- 12. The treated fabric colors are required to have a gloss not exceeding 4 in the gloss test.
- 13. The treated fabric color is required to be colorfast to crocking.



FROM: "HANDICRAPT, SIMPLIFIED PROCE-DURE AND PROJECTS" BY LESTER GRISWOLD.

- 14. The treated fabric color must withstand 300 hours' weathering test (changes in value or chroma under weathering are acceptable, but the hue is required to remain constant; for example, a yellow-green must not change to blue-green.
- Infra-red reflectance must remain constant under 6 months' outdoor exposure, or under 300 hours' accelerated weathering in test.
- Infra-red reflectance, over black and white, must be within limits shown in chart.

INFRA-RED REFLECTANCE

CAMOUFLAGE	INFRA-RED R	INFRA-RED REFLECTANCE		
FABRIC COLOR		res related sium Oxide		
	Minimum	Maximum		
Light Green	37.0	57.0		
Dark Green	37.0	57.0		
Sand	24.5	100.0		
Field Drab	24.5	57.0		
Earth Brown	24.5	57.0		
Earth Yellow	24.5	100.0		
Earth Red	24.5	57.0		
Olive Drab	24.5	57.0		
Black	0	24.5		
White	57.0	100.0		
Forest Green	24.5	57.0		
Desert Sand	24.5	100.0		

Requirements for netting and for camouflage garnishing cloth under an expanding industrial plant-protection program, as well as for military needs, will inevitably speed the effort to find new and practical substitute materials. Among the important qualities required are resistance to deterioration under outdoor conditions, and of low absorption of water (a material which absorbs water readily would cause concealment netting and garnishing to sag during and after wet weather).

Cotton, in one 16-week exposure test under direct sunlight, showed 13 per cent deterioration in one test, while nylon deterioration ranged from 23 per cent (with no pigmentation added) to 75 per cent with pigment added.

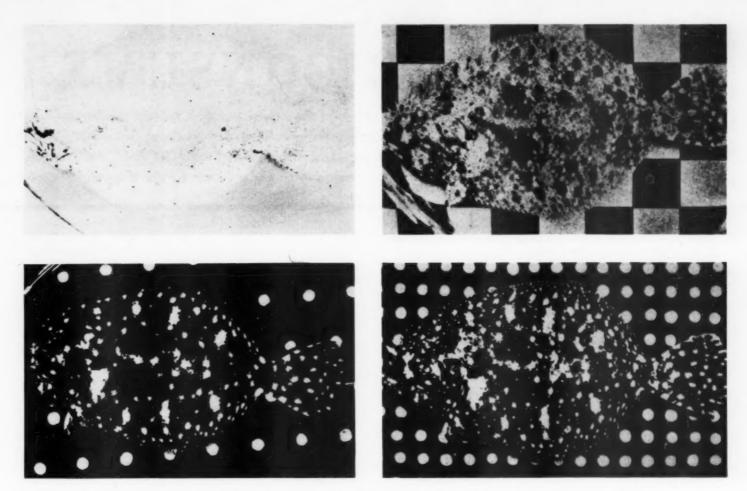
For CAMOUFLAGE IN ACTION, please turn the page

STANDARD CAMOUFLAGE COLORS

Standard camouflage colors have been developed by Howard Ketcham, based on studies of soil colors from all over the world, to coincide with various requirements for concealment against different types of earth and foliage, and against water backgrounds. These standard colors are obtained by two methods: (1) Pigment mixture. (2) Visual blend, in which component colors are employed separately, each over a stated percentage of the total area. The components blend even a short distance away, resolving themselves into a single color. When the proper proportions of the component colors on slotted circular discs are rotated together on a spinner device, they resolve into the camouflage color. . . . Here are Howard Ketcham's camouflage colors, and the methods by which each is obtained. The left column in each case lists the component colors which are used to make up the camouflage color. The column headed Pigment Mixture indicates the proportions of each component color which are mixed as pigments to form the camouflage color. The column of Visual Blend on the right indicates the percentage of each of the component colors which will be resolved by the eye into the camouflage color, when seen from a suitable distance.

COLOR	COMPONENT	PIGMENT MIXTURE	VISUAL BLEND	COLOR	COMPONENT . COLORS	PIGMENT MIXTURE	VISUAL BLEND
25% 40% GREEN NO. 1 35%	Permanent Green Blue-Black Georgia Ochre Ferrite Red Metallic Brown	12 parts 3 parts 2 parts 2 parts	25 % 35 % 40 %	5% 6% 6% GREY NO. 1 83%	Permanent Green White Blue-Black Ferrite Red	15 parts 5 parts 4 parts 3 parts	6% 6% 83% 5%
10.5% 20.5% 2% GREEN NO. 2 67%	Permanent Green Georgia Ochre Ferrite Red Blue-Black Lemon Ferrite	8 parts 8 parts 1 part	20.5% 2% 67% 10.5%	10% 25% GREY NO. 2 65%	Blue-Black White Permanent Green	7 parts 5 parts	65 % 25 % 10 %
23% GREEN NO. 4 77%	Permanent Green Lemon Ferrite	10 parts 6 parts	77% 23%	36% 36% GREY NO. 3 49%	Permanent Green White Ferrite Red Georgia Ochre	6 parts 4 parts 1 part 1 part	49% 15% 36%
16% 10% RED NO. 2 74%	Ferrite Red Georgia Ochre Permanent Green	8 parts 7 parts 5 parts	74% 10% 16%	23% BROWN NO. 2 71%	Georgia Ochre Metallic Brown White	15 parts 12 parts 2 parts	23 % 77 %
26% 29% RED NO. 4 45%	Lemon Ferrite Ferrite Red White	1 part 1 part 10 parts	45 % 29 % 26 %	30% BROWN NO. 3 70%	Georgia Ochre Raw Umber White	10 parts 7 parts 2 parts	30% 70%

The following are basic colors and no mixture or blending of components is required green no. 3, red no. 1, red no. 3, brown no. 1. brown no. 4. blue-black, lemon ferrite



Since the beginning of time nature has practised arts of defense which we often regard as modern discoveries. The four photographs above are of the same fish at the bottom of whose tank different cards have been placed.

CAMOUFLAGE IN ACTION

To Plan a camouflage installation for a factory or for a military installation, fullest use of available natural concealment is essential. For example, rough terrain and underbrush render shadows less conspicuous. A factory can be made less of a bull's-eye for enemy planes by combining the use of netting garnished appropriately, by painting which reduces the light reflection of long horizontal architectural lines of the building structure, by disguise of shapes and purposes (concealing smokestacks, for example) and by the use of dummy structures. False shapes of burlap supported on wire can break up the sharp outline of a factory building.

FACTORIES can be made to resemble innocuous rows of residences, using all the resources of the camoufleur's art to break up the straight lines of a long structure, to disguise smokestacks, and to conceal railroad sidings which are another giveaway to hostile airpower that makes a bull's-eye of most factories.

A woeful example of the contrary result was discovered in the recent advance through North Korea when it was discovered that our airmen had bombed out a new housing project for industrial workmen's families, because the grim lines and old-fashioned smokestacks of the housing project appeared to be an industrial plant to aerial observers.

THE RUSSIANS CONTRIBUTED to the technique of military camouflage a bridge with a movable middle section which could be sunk under water during daylight hours and speedily refloated into position at night. Enemy bombers noted the transport bridge but assumed from the gap that sufficient damage had already been inflicted, and made no

attack. With the coming of darkness the Russians were able to resume transport service speedily.

CAMOUFLAGE PROTECTION can be a two-edged weapon. American troop transport vessels required different camouflage treatments for Atlantic Ocean service and Pacific operations. On occasion, however, the troopships were hurriedly shifted from the Atlantic to the Pacific, and without time for changing camouflage they stood out conspicuously. Only the skills and superiority of our air patrols and anti-submarine precautions averted tragedy.

OUR MILITARY CAMOUFLEURS have built complete airdromes for use as decoys to lead enemy aircraft away from the bona fide target. For the factory plant in a suburban or rural area, a comparable measure can be taken by constructing, at a safe distance, what appears to be the roof of a factory, complete with smokestack (smoking), railroad trackage and parking lot.

Such a decoy can draw fire away from the real installation, but the decoy must be plausible, with adequate signs of life around the site.

While decoys, paint treatment to tone down the colors of structures, and planting of natural shrubbery will all play a part in a comprehensive camouflage program for American industrial plants, the extensive use of camouflage netting and garnishing on a scale previously unknown in this country can be expected. According to some reports, at least 1,000 Russian-made copies of the B-29 bomber are already available for possible hostile action, and the growing program of civilian defense planning promises to place a gigantic task before those able to provide the fundamental tools of concealment and disguise • END



THE CONSUMER

The millman, the converter, the apparel manufacturer, the retailer, the retail clerk...all throw at Mrs. Consumer words and phrases as selling blandishment...all assuming that she knows what they're talking about. Sadly enough, it's gibberish to her. And so writer Cora Carlyle gathers a group of typical

Q. Please give me some information as to how a technologist classifies or appraises color.

A. Color would be classified as acid, basic, vat, substantive, or even of other origin. The technologist studies each color, shade, cast, tone, tint or hue in its possible application for dyeing, whether in the piece, yarn or skein, and for printing whether roller or direct printing, resist printing, discharge printing or other color application methods. The most important factor in the use of color is its degree of fastness since no dye is completely fast under all conditions of fabric use.

Q. Explain briefly how multifilament yarn is made.

A. The usual procedure is to make it from dissolved protein extruded into a coagulating bath. These extruded filaments then enter a duct where they are subjected to the action of jets of gas or of dry air, since in this manner they can be separated and individually dried. In this form they are recollected and then spun together into continuous yarn.

Q. Do fabrics for men's suitings that are made partially or entirely of man-made fibers need to be finished in any special way? I know something of how woolens and worsteds are finished for the trade, but nothing concerning the newer textile fibers.

A. Considerable work, experimentation and research are constantly being done on new fabrics. Large textile plants, outstanding finishers and manufacturers of apparel are all working together for better fabric development and fabric control. Textile manufacturers are taking a much greater interest in the terminal use of their products for the apparel trade; both groups show a close integration since each can benefit from the results. A durable finish which will repel spots, stains and wrinkles has been on the market for some time; several concerns have this matter down to perfection. A firm hand and the so-called worsted feel are found in some of the goods. Finishes should be aimed at allowing for wet cleaning and dry cleaning; many fabric finishes will last throughout the life of the garment. Please feel free to ask if you desire more information since I have covered only the main essentials here.

Q. How is the so-called iridescent effect obtained in highstyled cottons?

A. It is obtained by having the yarns that go the length of the fabric (warp) all of one color while the crosswise (filling) yarns are either a slightly darker or slightly lighter shade or tone to give the effect. When the rays of light hit the fabric at various angles the iridescent effect is observed. The same result may also be obtained by cross dyeing.

Q. How many types of pigment prints are in use today?

A. There are three general types: (1) The emulsion type in which finely ground pigments are dispersed in an emulsion,

along with a suitable resin or some other type of binder. (2) The lacquer type which uses a nitrocellulose lacquer for a pigment binding agent. (3) The casein or albumen type in which either one or the other of these elements is used to bind pigments for printing designs in white. The latter form of binder is also used in conjunction with the discharge method of printing fabrics.

Q. Can you state some reasons why garments will change in color with ordinary wear?

A. Color changes in garments may be the result of structural changes in the dyes due to sun fading or gas fading, or to loosening of the dyes from the fabric because of color bleeding or running. By anticipating the service to be given by each fabric, textile mills for some time past have been doing splendid research and development work to obtain the maximum degree of fastness. There is, however, no such thing as an all-around 100% fast dye.

Q. Is there any way of polishing metal threads in metal brocades? I have an evening dress in which the once shining threads are now dull and blackened.

A. There is no way to restore completely the original appearance of these threads, although your dry cleaner may be able to improve it somewhat, depending, of course, on the cause of the blemishes. At present, there are on the market fibers that appear as though made of metal, but actually have a synthetic base. These will not tarnish.

Q. When you see size 9, for example, on hosiery, just what does it mean and how is it established?

A. Size 9 refers to the length of the foot. You can decide your correct foot size for yourself by stepping on a sheet of paper and drawing an outline of the foot. When you do this be sure to rest your weight on the foot. Then measure from the tip of the toe to the back of the heel. This will give you the foot size that you should ask for in the store. It is recommended, however, that you allow a half size larger for comfort since often the foot will swell during walking or other activity.

Q. Are men's neckties washable? I have had to send ties to the cleaner so often that I thought I would like to wash them for the sake of economy.

A. This is a timely question. First let me say that ties of cotton and other fabrics used for summer wear which have been dyed or printed with vat colors are easily washable. Yearround ties present a different story. Good results can be had from carefully washing woolen or worsted ties, either woven or knitted. Knitted rayon ties and those made of nylon staple will also wash well.

The following may be of value to you: Dip-squeeze the ties in lukewarm neutral suds, working as quickly as possible,

WANTS TO KNOW...

Mrs. Consumers from time to time... asks them what they'd like clarified in textile terms... and then fires the questions at Dr. George Linton. Here is another batch. The moral is: Just because you know what you mean, don't take it for granted that the other person does.

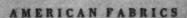


and rinse in lukewarm water. Do not allow the ties to soak. Be sure not to crush the ties in the hands during any treatments because washer wrinkles will have to be smoothed out by hand or even by ironing. Do not try to squeeze out excess water by hand; it is better to lay the tie flat on a terry towel. Roll up, and press out the excess water, and then hang the tie over a towel rod. Straighten out the tie by finger-pressing and be sure to give attention to any lining.

If there is any doubt in your mind as to whether a tie is washable, try a small portion of the part that does not show when worn. If you wash a tie other than those mentioned above, it will likely need ironing; this is difficult for a non-professional to do in a satisfactory manner since ironing a tie is almost sure to produce streaks.

- Q. I have a rayon faille suit that is considered of the better quality. The surface has become fuzzy at all points where the fabric comes in contact with other parts of the suit or with other objects in normal wear . . . the back of the skirt, the inside collar, under arms, elbows, etc. What causes this?
- A. The chances are that the warp threads, those which cover the filling yarn in weaving, were not woven compactly enough in the texture. Thus, wherever abrasion or chafing occurs, the filling or rib yarn will, in a short time, come through to the surface. There is no remedy for fabric in this condition. Always hold material against the light to see if it is compactly or loosely woven. The pick count or texture in faille is decidedly variable since there is a wide price span in this fabric.
- Q. I purchased an Orlon sweater. Does it need any special care in washing?
- A. Wash the sweater by the usual hand method in lukewarm suds followed by lukewarm rinses. You will find that the soil will wash out very quickly. Roll the sweater in a terry towel to extract excess moisture; then lay flat on a towel to dry. It is not necessary to stretch the sweater; merely finger-press it to proper shape.
- Q. Please tell me the difference between a thermosetting plastic and a thermoplastic resin.
- A. A thermosetting plastic, often called a thermosetting resin, will harden or set when heat is applied. This action is caused by the monomers which unite under heat to form a high molecular-weight rigid polymer which has a three dimensional structure. A thermoplastic resin will soften when heat is applied and will become hard when cooled. These resins are made of long linear chains with only secondary valence forces operating between the chains which are classed as being thermally unstable.

- Q. What is meant by a *crimped rayon fiber* as noted in some advertisements?
- A. Rayon, since it received its name in 1924, is produced in filament form. In 1935 rayon began to appear, as well, in rayon staple form or tow; that is, cutting of the filaments as they were extruded from the rayon spinning box to a particular length, one to ten inches long. Both the filament and staple fibers were round, smooth and straight, resembling a glass rod. A method for making rayon staple in crimped form was established since it was found that many of the blended fabrics made of rayon with wool or cotton produced a more appealing hand and surface finish when the rayon was crimped. Wool is a wavy type of fiber while cotton possesses 150 to 300 natural turns of twist per inch. Little wonder, then, that crimped rayon fibers would add to fabrics in which they were used in varying percentages. Crimped rayon will not lose its quality, which is permanent, nor will wear and washing affect the crimp at all.
- Q. With the anticipated high cost of wool and woolen fabric, I have looked at some suiting fabrics, men's and women's, made with other blended fibers. Can you tell me something of their relative values?
- A. Many of the Fall lines of suitings have been announced as having varying degrees of new fiber content . . . nylon, acetate rayon, estron, viscose rayon, dynel and orlon. Some suiting is made solely of acetate rayon and viscose rayon. Plain, staple and even fancy weaves are used in the construction. These fibers seem to please many customers in the stores. In the better stores the salespersons have been well informed on the merits of the respective fibers and they should be able to discuss the matter with you. Read labels well for actual content of fibers, dry cleaning instructions, pressing, etc. Fabrics of these new fibers are definitely here to stay and they give good to excellent service to the wearer. There is such a wide range possible that space does not permit the discussion in this column of the relative merits of these fibers either in filament or staple form.
- Q. I bought a quilted robe which, after three wearings, is wearing badly. Many of the quilting stitches have broken and the cotton stuffing is shifting so that thin places can be seen. Is there anything I can do?
- A. Unfortunately, no. When buying a quilted robe, one should examine the stitching to see that there are enough stitches to the inch (at least 12) to be able to hold the cotton in place. Also the quilting design must be closely enough spaced so that the cotton cannot shift.
- Q. How can I keep my rayon faille suit from getting shiny?
- A. If you have a steam iron, always press the fabric on the wrong side over a terry towel. Otherwise, have your tailor steam-press it.





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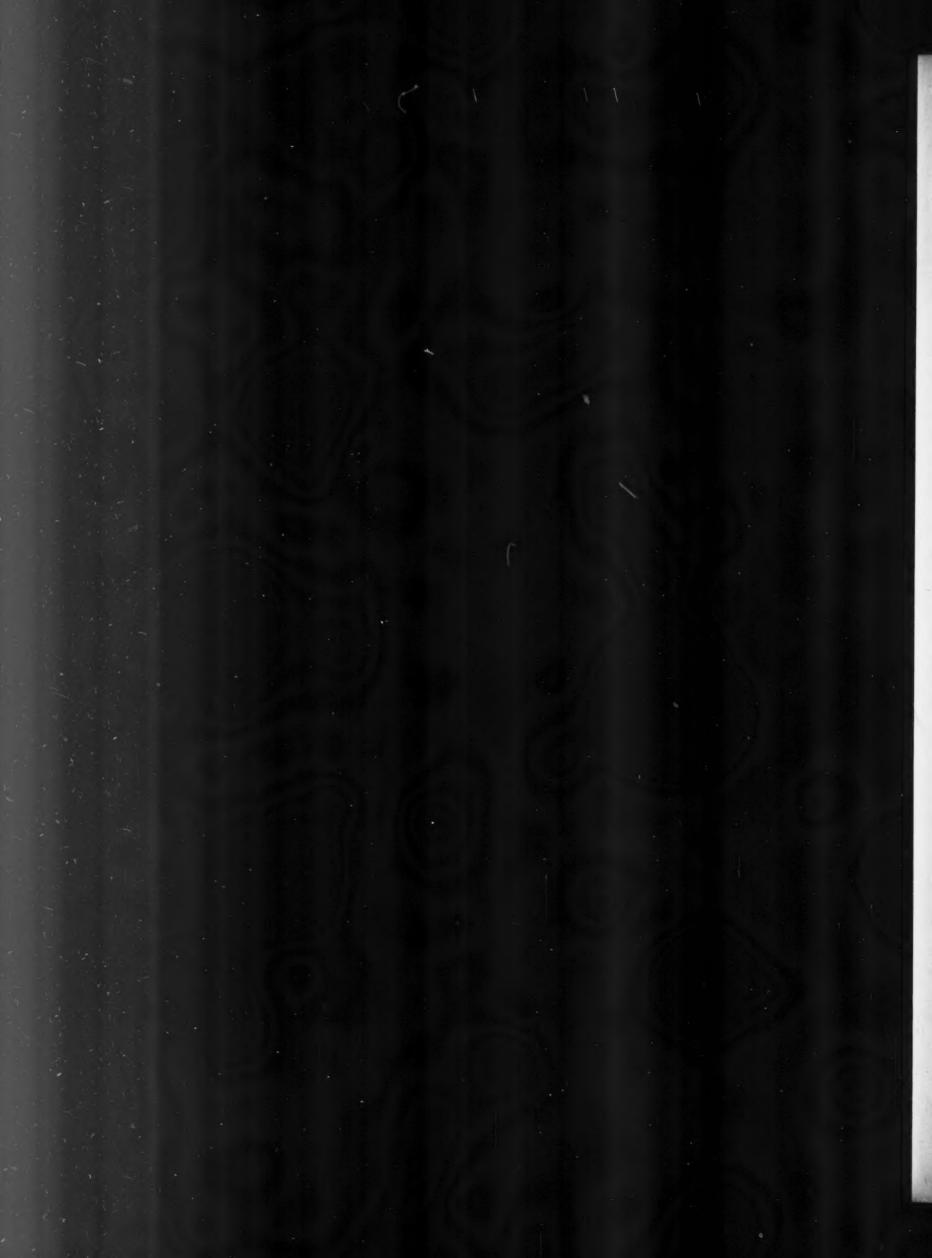


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